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CONTROLLING HUMAN BEHAVIOR

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CONTROLLING HUMAN BEHAVIOR

A First Book in Psychology for College Students

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PREFACE

This book aims to bring together psychology and living. Many years of teaching psychology and wide contact with business have impressed upon me the inadequacy of our knowledge of psychology in relation to vital problems of human behavior on the one hand, and the omnipresence of psychological problems on the other. If we look at business, society, government, and the homely problems of daily life through the eyes of a psychologist, we see psychological problems within us and around us everywhere. We see how rapidly psychology as a science has developed and how much its researches offer when they are brought to bear on vital human situations. We see how valuable the training in psychology and scientific method is in dealing with the problems of the work-a-day world if we use our wits in applying known facts about human nature and human behavior.

This book endeavors to consider more fully the vital problems of human behavior than the average introductory text. It aims to deal with situations that matter to us, with basic problems around which the world of human affairs revolves. It is designed to deal with problems connected with making a living, with establishing and maintaining family life, with behavior in business operations, with influencing people in the mass, and finally with the art of effective, satisfying living.

Physics and chemistry aim to understand and control the forces of nature so as to use them to serve the interests of man. Psychology should correspondingly aim to understand and guide man's behavior so as best to serve his own interests. The average textbook in psychology does, if I may be pardoned for exaggerating for a moment, what a textbook in physics would do, if it discussed an automobile by describing the doors and the windows, the paint and the upholstery, the wheels and the radiator, but said nothing about the power and the motor. The average student at the end of the usual introductory course should be more aware that psychology has something to do with his present and future problems of living. Someone wrote an essay entitled, "English As She Is Spoke." There is need for

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a textbook which might be designated "Psychology As She Is Lived."

At the turn of the century, Professor J. McK. Cattell, leader in psychology at Columbia University for a third of a century, wrote:

> The nineteenth century witnessed an extraordinary increase in our knowledge of the material world and in our power to make it subservient to our ends; the twentieth century will probably witness a corresponding increase in our knowledge of human nature and in our power to use it for our welfare. (*Science*, April 10, 1903.)

And as long ago as 1913, Dean C. E. Seashore, head of the Department of Psychology at the University of Iowa, urged the need of studying psychology in daily life:

> We must not entertain the idea that Applied Psychology is to live merely upon the crumbs that fall from the table of pure psychology. . . . Applied Psychology must recognize itself, its diversity, its stupendous difficulties, its essential limitations, and withal its promise and worth. (*Psychology and Daily Life*, p. 226.)

President James R. Angell of Yale University, formerly head of the Department of Psychology at the University of Chicago, reviewed in an address at a dinner in his honor on April 5, 1935, the notable development of psychology in recent decades, and emphasized that the science of psychology and human relations has never been more important from the point of view of the needs of the world than it now is, and urged concentration on the study of motivation as the present, greatest concern of civilization. (*Science*, Vol. 81, p. 359.)

Dr. A. T. Poffenberger, in his address as president of the American Psychological Association, September, 1935, stressed both the backwardness and the need of psychology in dealing with problems faced by the world in the reconstruction following the depression of the 1930's. He asked:

> . . . are we as an Association holding too much aloof from everyday problems from fear of contamination by them? . . .
>
> . . . When could the human problems ever be greater than in such a period of social reconstruction as we are now experiencing? Widespread unemployment calling for adjustment of millions to new tasks; increased leisure for these millions beyond the dreams of a single generation ago; plans and programs for unemployment insurance and old-age insurance; changing educational methods to prepare the oncoming generations to

> meet the changed social environment—every one of these has psychological problems at its core . . .
>
> However we may define the term, psychology is inevitably close to the problems of life; the problems of life are in one way or another its problems; and the solution of these problems in the laboratory stand to become the solutions of the problems of everyday life. The psychologist on this account bears a particularly heavy responsibility.

Most of the waking life of the average person is devoted to making a living and maintaining home and family. Yet, our textbooks hardly indicate that there are such problems, or that they constitute nearly all there is to life after school days are over. The understanding of human nature and of the practical principles of human behavior in the day-to-day dealings with fellow men are essential to happy successful living. It should be a part of the culture of every educated man or woman.

This book is not designed to be a supplementary text or a text on applied psychology. It is designed to be a first book in psychology for use in introductory courses in colleges and universities. It comprises much material not found in current texts in addition to what I and the collaborating authors believe to be the essential scientific material for an introductory book. Problems, cases, illustrations, and settings are taken, as far as possible, from everyday affairs.

I have no illusions about the difficulties in attempting to bring together psychology and living. These difficulties lie not only in the choice of material and method of presentation but also in the lack of material as well. In this attempt it seems desirable to introduce subjects which are often reserved for advanced courses but it seems to me that these should be discussed in the introductory course because approximately three-fourths of the students never go beyond a first course. Contact with these subjects and problems in the first course may arouse interest to delve into them more deeply.

No one realizes more than the authors how far short the task has fallen of what might be done or will be done in bringing psychology to bear more fully on the problems of life. I hope this book is a useful step in that direction.

The division of labor in the preparation of the manuscript was as follows: The conception of the book, the point of view, and the chapter headings were planned and delineated by myself. I was responsible for writing the Foreword, Chapter I, Introduction, Psychology and You; in *Part I, Controlling the Behavior of Self:* Chapter II, I-Want's and Determinants of Human Behavior; in *Part II, Controlling the Behavior of Others:* Chapter XXI, Controlling Behavior through Personal Selling (with Dr. Koerth); Chapter XXII, Controlling Behavior through Advertising (with Mr. Barton); and in conclusion Chapter XXVII, The Art of Living. I also functioned as adviser on all the other chapters.

Dr. Koerth was primarily responsible for writing in *Part I:* Chapter III, Controlling Routine Behavior; Chapter IV, Control through Habits; Chapter XI, Controlling Feelings and Emotions; Chapter XII, Behavior of Self in Social Contacts; Chapter XV, Personality; Chapter XVI, Behavior Hygiene; in *Part II:* Chapter XX, Controlling the Behavior of Abnormal Persons; Chapter XXIII, Controlling Behavior through Public Speech; and Chapter XXVI, Controlling Behavior through Religion.

Dr. Stanton was primarily responsible for writing in *Part I:* Chapter V, Learning and Habits of Study; Chapter VI, How to Think; Chapter VII, Remembering; Chapter VIII, How to Concentrate for Work; Chapters IX and X, How to Use One's Energies Efficiently; Chapter XIII, Behavior of Self toward Associates in Occupations; Chapter XIV, Selection of Vocation; in *Part II:* Chapter XVII, Controlling the Behavior of Children in the Home; Chapter XVIII, Controlling the Behavior of Children in School; Chapter XIX, Vocational and Avocational Direction; and Chapter XXIV, Controlling Behavior through Music, Art, and Entertainment.

Mr. Barton was primarily responsible for writing Chapter XXV, Controlling Public Opinion. In addition he read the entire text from an editorial and literary point of view.

DANIEL STARCH

NEW YORK CITY
September, 1936

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CONTROLLING HUMAN BEHAVIOR

CONTROLLING HUMAN BEHAVIOR

FOREWORD

Behold the panorama of man!

Behold the forces within man which created this panorama!

The science which you are about to study has to do not merely with reactions in a laboratory but with heart throbs in a moving world.

Remember, it is our desires and emotions that move us to action.

Remember Wordsworth's line, "Thanks to the human heart by which we live."

Today's trillion units of wealth plus countless thoughts in books were created by man's effort and are measured by his effort—by the effort he is willing to make to possess whatever he wishes to possess.

We marvel at our miracles. Only a century and a quarter ago the renowned philosopher, Immanuel Kant, throughout the eighty years of his life, was never more than forty miles from his native Königsberg. Today we move a mile a minute on the ground and five miles a minute in the air. At a moment's notice we talk to a friend across the continent or listen to a symphony a thousand miles away.

Think of the wonders of inventions and the changes in man's behavior—all the result of man's inner forces.

Once a cobbler made one pair of shoes a week; now, with machines, he makes forty pairs a week. Once the average man had eight hours for sleep, two hours for eating, and fourteen hours for work. Today he has eight hours for sleep, two hours for eating, eight hours for work if he is fortunate, and, most important of all, he has six hours, which he did not have before, to do as he pleases. To deplore machines is to deny culture and leisure to the average man.

Picture the power of the tools to influence the thought and action of our millions of people. We read thirty-eight million newspapers a day, a hundred and five million magazines a month, and three hundred million books a year. One voice speaks at one time to a nation of one hundred and twenty-eight million people. Think of the widened horizon. Think of these instruments of control.

All values are values to man—to himself or to others—in satisfying his nature, his desires, his wants. Life's forces always find a way to satisfy these wants: hunger, comfort, a mate, power over nature, approval by his fellow men. These are the indomitable forces within man without which he cannot live. They break through all barriers; they find new ways; they will not stop. Everywhere and always these energies strive and press. They are the powers within man which have created the machines, the books, and the institutions that symbolize progress.

Let us learn to understand and control these forces in the behavior of man. This is Psychology.

CHAPTER I

INTRODUCTION: PSYCHOLOGY AND YOU

If you could ascend high enough in an airplane, and had eyes sharp enough, to see at one time the entire 128,000,000 people in the United States, you would see 39,000,000 men and 11,000,000 women gainfully employed in normal times. You would see 32,000,000 women in charge of families and 31,000,000 children and young people in homes and schools. You would see 12,000,000 older people retired after their life's work is done; and finally you would see 3,000,000 defectives, unable to pull their own load and dependent upon charity. In short, you would see that two-thirds are engaged in making a living or preparing to make a living, and one-fourth are looking after family and home. The rest have done their day's work or are incompetent.

What does making a living or preparing to make a living consist of? It consists of a tremendously complex system of human interactions, of working and dealing with one another, of influencing one another or being influenced.

Life may be divided into two parts: guiding your own behavior, and guiding the behavior of others. Obviously, problems of psychology are within you constantly and around you everywhere. Those within you are most vital to you. Those around you may be more distant but in the end equally vital to you. They all have to do with your own behavior or the behavior of others. They relate to the endless succession of everyday acts and situations, trivial or otherwise, which make up your days and years. They also relate to the great moments in your life—when you earn your first money, when you go away from home to school for the first time, when you choose a career, when you secure your first job, when you marry, when you become a parent, when you change your job, when you start in a new direction.

The effectiveness of your behavior and the satisfaction of your life are determined by the way in which you analyze these situations in terms of motives, attitudes, and reactions on your part; in terms of motives, attitudes, and reactions on the part of others;

how well you are prepared for them; and how skillfully you deal with them.

Psychological problems are met on every hand. The problem for the teacher is as much one of handling his pupils as knowing his subject. The concern of the student is not only a question of studying but also of dealing with others in his environment. The lawyer must know not only his law, he must know also how to lead judge, jury, or client to accept his ideas. The minister must know not only the better life; he must be able to lead his flock toward it. These are psychological processes of a complex nature. A thorough practical understanding of them goes a long way toward effectiveness in the pursuits of life.

Turn to the newspapers and you find problems of psychology on every page. Leading New York newspapers on a typical day spread across five columns the headline "Hitler's Army Occupies Rhineland; France Mans Border at Full Strength, Will Demand League to Apply Sanctions." What is behind these acts? What are the strivings of human nature? What do the Germans want? What do the French want? What are the psychological factors in negotiating a settlement?

On the same page a two-column headline relates to the strike by elevator operators: "Strike Peace Hope Revived as Mayor Offers New Plan." What do the strikers want? What do the building managers want? What are the desires and traits in human nature that are behind this struggle?

In another column an address before the Young Republican League of Colorado by Herbert Hoover opens with this sentence: "This assembly marks the anxiety which stirs the nation." On the day before, another newspaper reported an address before a meeting of Democrats in Los Angeles by Rexford G. Tugwell, with this headline and opening sentence: "Workers and Farmers, Unite! How deep are the sources of your indignation?"

The problems of human behavior and the sources out of which they spring are on every hand and basic to the events. The noted historian, James Truslow Adams, states that "the success of a form of government depends in the last analysis on the wishes, desires, and character of the individuals operating it." Can we understand these desires and forces? Can we direct them? How? What can the understanding of human nature and behavior contribute to their solution?

Turn to the market place and you find problems of psychology on every side. The first problem in this field brought to my attention for experimental study was by a manufacturer of tooth paste. How could he sell more tooth paste? Another concern wanted to know what housewives thought of fishcakes in tin cans. What was the best shape of can? Experiment revealed that a can with a certain shape looked larger than the others tested, although their cubical content was the same. Another concern wanted to know how it could develop morale and loyalty among its employees. And so on, *ad infinitum.*

Most problems in business have psychological aspects and in many the psychological aspect is the most important. A business is not an office or a building; it is an organization of persons. Its success depends upon the selection and supervision of its personnel. The most influential persons in the world are those who handle people—executives, teachers, leaders. An understanding of human nature is essential.

Psychology is a most important science. It unfolds the principles by which human forces may be guided; and human forces may dominate the mechanical forces of nature, no matter how powerful. Wherever men talk with each other, work with each other, or deal with each other, *there* they influence each other; and wherever men influence each other, *there* are problems in psychology.

The center of interest in psychology on the part of the social and business world is in the prime movers of behavior, in the dynamos of action, in what causes people to act as they do, and in how they may be influenced to act in desired ways. These prime movers, drives, desires, I-want's, or whatever they may be called, are the forces in social behavior, in preparing for living, in family relations, in business, in trade, in industry, in labor relations, in national affairs, in international relations. They operate in, and usually determine, the simple, trivial situations as well as the large, important transactions. Examples may be observed on every hand.

At a business conference loyalty of employees and savings by employees were being discussed. Certain guarantees behind the savings were to be removed. After some discussion, the chairman of the meeting remarked, "Your psychology is wrong." And so it was. They were proposing to remove certain guarantees without pointing out that those guarantees were no longer necessary and added nothing to the safety of their savings. The manner of handling this point involved the question of loyalty and acceptance of the idea on the part of some 12,000 employees.

A housewife has a maid who is unsatisfactory in many respects and very satisfactory in other respects. She has some differences with her and the question is, how shall the matter be discussed with her to arrive at a satisfactory solution? The psychological problem is, how shall the conversation be opened and carried on so as to lead to the desired outcome? If the conversation by the housewife is opened one way it will result in the maid's leaving; if it is opened another way it will result in her staying and changing her attitude toward her work.

A rug salesman in one of New York's large department stores is trying to sell an Ispahan rug. The customer asks him how it compares with a Sarouk. The salesman says there is no comparison. The Ispahan is far better. It is like a Rembrandt compared with a ten-cent print. This annoys the customer, because the salesman is either insincere or uninformed. He fails to understand the psychology of selling, although he has been a salesman for many years.

The Italo-Ethiopian war broke out. Benito Mussolini made his famous address to a radio audience estimated at 20,000,000 Italians and many millions more throughout the world. What were the driving forces in the Italians and in the Ethiopians which led them to take the positions they did? Dr. P. B. Potter, a member of the International Committee of Four that adjudicated the Ualual incident on the Ethiopian border, reported that the shooting of a bird some months before by one of the Ethiopian or Italian soldiers who were facing each other along the uncertain, indefinite Ethiopian border was the origin of the war. Actually, however, the psychology of the situation is more subtle than that. The real forces leading to a war are more deep-seated in human nature, and the shooting of a bird is merely the incident which releases these forces.

The everyday importance of understanding the psychology of ourselves and our fellow men is broadly recognized throughout this book and definitely indicated by facts presented in the last chapter. There you will find that 600 intelligent men and women regarded the statement, "Know thyself," as second in importance only to the Golden Rule in guiding human behavior. This book is about you and your fellows with their work-a-day world of problems. And what could be more interesting? "Folks is the most interesting things what is," said Josh Billings.

One of the chief things you should acquire in a study of psychology is to learn to analyze in psychological terms the human situations within you and around you. These situations as well as experiments in the laboratory are your raw material. The better you learn to analyze them the better you will solve them.

Concrete Behavior Situations

Preparing for living is the young person's most vital problem. At five o'clock on a recent September morning Frederick Brent, aged 14, was sitting on top of his new, unscratched, undented trunk, near the brick schoolhouse, a quarter of a mile down the main road. For weeks, his mother and sister had helped to get his clothes ready for this great occasion. He was waiting for his cousin and his uncle who were living two miles farther up the road. The uncle was to take the two boys to the railroad station nine miles away. They were on their way to preparatory school and college.

What are the problems with which you yourself are most concerned? Frederick started off for his first year at school not certain what he would prepare himself for. His grandfather wanted him to become a writer; his father and mother wanted him to become a minister. Frederick himself was uncertain, but vaguely expected to follow his parents' wishes. His first year at school, his opportunity to think independently, his contacts with fellow students and new environment changed his vague plans to the certainty that he did not want to become a minister not because of any change in his regard for this profession but because of greater interest in other fields. What were the driving forces, the I-want's in Frederick, in his mother and sister, that caused him to journey away to school?

Behavior related to mating and behavior toward the opposite sex open a long vista of psychological problems. These forms of behavior begin at adolescence and extend in one form or another throughout life. What are the inner urges in this behavior? What are the problems of normal development, of adjustment and control from the standpoint of the individual and from the standpoint of society?

We all know within ourselves how powerful and far-reaching are the urges having to do with mating so that we can make our own descriptions. But we see the forms of behavior more clearly in others than in ourselves, and for the sake of concreteness let us turn to *David Copperfield* by Dickens, who has made the characters in his books as real as our neighbors. We can see ourselves in the behavior of David and Emily.

> A figure appeared in the distance before long, and I soon knew it to be Em'ly, who was a little creature still in stature, though she was grown. But when she drew nearer, and I saw her blue eyes looking bluer, and her dimpled face looking brighter, and her whole self prettier and gayer, a curious feeling came over me that made me pretend not to know her, and pass by as if I were looking at something a long way off. . . .
>
> Little Em'ly didn't care a bit. She saw me well enough; but instead of turning round and calling after me, ran away laughing. This obliged me to run after her, and she ran so fast that we were very near the cottage before I caught her.
>
> . . . But she was so affectionate and sweet-natured, and had such a pleasant manner of being both sly and shy at once, that she captivated me more than ever.
>
> . . . The best times were when she sat quietly at work in the doorway, and I sat on the wooden step at her feet, reading to her. It seems to me, at this hour, that I have never seen such sunlight as on those bright April afternoons; that I have never seen such a sunny little figure as I used to see, sitting in the doorway of the old boat; that I have never beheld such sky, such water, such glorified ships sailing away into golden air.
>
> . . . I took that occasion to put my arm round Em'ly's waist, and propose that as I was going away so soon now, we should determine to be very affectionate to one another, and very happy, all day. Little Em'ly consenting, and allowing me to kiss her, I became desperate; informing her, I recollect, that I never could love another, and that I was prepared to shed the blood of anybody who should aspire to her affections.
>
> . . . Ah, how I loved her! What happiness (I thought) if we were married, and were going away anywhere to live among the trees and in the fields, never growing older, never growing wiser, children ever, rambling hand in hand through sunshine and among flowery meadows, laying down our heads on moss at night, in a sweet sleep of purity and peace, and buried by the birds when we were dead! Some such picture, with no real world in it, bright with the light of our innocence, and vague as the stars afar off, was in my mind all the way.

Nature has planted these urges into the make-up of boys and girls—men and women. If we ask why, the plain answer is, the survival of the race. William James (1890) has appropriately described and analyzed mating behavior.

> Why does the maiden interest the youth so that everything about her seems more important and significant than anything else in the world? Nothing more can be said than that these are human ways, and that every creature *likes* its own ways, and takes to following them as a matter of course. Science may come and consider these ways, and find that most of them are useful. But it is not for the sake of their utility that they are followed, but because at the moment of following them we feel that that is the only appropriate and natural thing to do (p. 393).

What makes business go? H. R. Knickerbocker, European newspaper correspondent, described the difference he observed between farmers in Communist Russia and farmers just across the border in the Baltics where individual enterprise is permitted.

> For many years, crops and livestock decreased in the Soviet union, but crops and livestock in the Baltic states have steadily increased. Peasants have less than they used to in Russia. They have more than they used to in the Baltics.
>
> Jonas Ambrozevicius, of the Lithuanian village of Veiverai, twenty miles out of Kovno, is a living example of the difference between this part of old Russia and that part which is now the Soviet union.
>
> *High Living Standard*—Jonas' story is an epic of the sort of personal endeavor that keeps the capitalist system on its feet in the days of its tribulations. It is a story that was repeated a million times on a million farms from Finland down to Poland and it explains why this part of the world will not go Communist from the inside.
>
> Jonas is fifty-four today and when he returned from the wars in 1920 to his little farm of fifty acres he found every stick burned down to the ground. Not so much as a henhouse remained.
>
> *Works Fifteen Years*—Today Jonas by the sweat of his brow and the muscle of his arms has created, and owns the wealth to make him a respected man here, a criminal in Russia.
>
> He has a five-room house. Neat, clean, well-furnished, it would be a credit to any American farmer. In its pantry hang a dozen sides of salt meat.
>
> He has six horses, nine cows, twenty-five pigs, four sheep and thirty chickens.
>
> The livestock live in two large, well-made barns, built mostly by Jonas' own hands. Next to that is a spacious hay barn stacked high with fragrant hay. Next to that is a granary with piles of golden wheat and red-brown rye, light yellow oats and green dried peas.
>
> *Eat Like Americans*—Jonas, his wife and two children eat as well as many American farmers, incomparably better than any Russian farmer.

> He is proud of his American gasolene engine, of his children going to school, of his thresher, of his wife's sewing machine, of the six journals he subscribes to weekly, and he is proud of himself.
>
> Thus, too, the Baltic states created a system of agriculture which the best expert opinion in Europe today regards as the most advantageous to all concerned. The evidence goes to show that neither the collectives nor the dwarf farms can ever be as productive as the system of middle-sized farms run by the "rugged individualists" (*Rochester Evening Journal and Post Examiner*, May 22, 1935).

How do you explain the difference between the two types of farms? What factors in human nature account for it? What group of persons, if any, in a communistic state exercise self-interest?

There has been much discussion concerning the causes which brought about the great depression of the 1930's. Dr. Leonard P. Ayres, vice-president of the Cleveland Trust Company, who was trained as a psychologist and engaged in psychological research for many years and since the World War engaged in economic research and statistical work, listed eleven factors which have been widely accepted as responsible for this depression. The eleven factors are as follows: Malefactors of great wealth, over-production, price declines, reduced agricultural purchasing power, shortage or maldistribution of gold, shortage of consumer purchasing power, over-investment in productive equipment, technological unemployment, concentration of wealth, speculation, and bad banking. He analyzes each of these factors in turn and points out that they are considered erroneously to be the responsible factors.

While some of these factors undoubtedly are significant phenomena associated with a business decline, Dr. Ayres has pointed out sound reasons why they are not the primary factors responsible for the situation. His conclusion is that the ultimate factors responsible for the ups and downs of business are largely, if not primarily, psychological. They have to do with the prospects for profits, which is simply another way of saying that they go back ultimately to the forces of self-interest in human nature. To quote Dr. Ayres' (1935) own words:

> The evidence leads to the conclusion that trade cycles are mainly caused by changes in the volume of purchases of durable goods by business enterprises, *actuated by changes in the prospects for profits.*
>
> Both depressions and recoveries may be initiated by important changes in the volume of purchasing of either durable goods or of con-

sumers goods, but analysis sustains the proposition that business decisions are the controlling factors in the downward and upward turns of business activity, and that changes in consumer purchasing are not. Individual consumers change the volume of their purchasing when their incomes have been increased or diminished, and that happens when business which supplies their incomes has raised or lowered them.

Any general change in the prospects of business profits may initiate a depression or a recovery.

Another problem of psychological interest is that the values of the products of business, namely, commodities and services, are largely mental.

Human behavior in business. Trade by which work, services, or goods are exchanged for other work, services, or goods, is business. And nearly all of our daily concerns revolve around it. And this business goes on in men's minds, not in offices, shops, or warehouses. Business is human behavior. It revolves around values and values are mental. Prices are merely measures of value in terms of money established when two minds meet as buyer and seller.

A young Wisconsin farmer decided, in 1920, to add 40 adjacent acres to his farm. He paid $5,000 for the land, securing $2,800 of this amount from a first mortgage on his new property. In 1933 he still owed $2,200 on the mortgage. He tried to sell the land but he could not get enough to cover the mortgage, in fact he was unable to get an offer at all.

This piece of land was intrinsically just as good in 1933 as in 1920. It was still 40 acres. It was just as fertile. It raised just as big crops and just as good ones. It was surrounded by the same neighbors. Nothing had changed in its physical or human environment. The tract was located exactly the same distance from its near-by trading city. This city was very nearly the same size as it was in 1920,—about 38,000. The demands and needs of the city's population were just as great as they were in 1920.

But this had happened. In 1920 every farmer wanted to buy land or add to his farm; in 1933 no one wanted to buy land. In 1920 there were more buyers than sellers; in 1933 there were far more sellers than buyers.

Values are mental. The old basic law of supply and demand is partly physical, partly mental. The supply side is largely physical; the demand side is largely mental. In determining values the mental demand side usually plays by far the larger part. There may be a very small supply of a certain commodity, but if no one wants it, it has no value. If many people want it, it may have a fabulous price.

Values are determined by the number of people who desire an object and by the intensity of that desire in relation to the number of these objects for sale. Values are determined by the balance of desires between buyers and sellers.

What part does physical supply play in values or prices? The assumption that values are mental, you say, comes down ultimately to the amount of supply of a commodity. If that is so, what part does it play?

Supply, of course, does play a part. In the long run, however, the psychological demand side is possibly a 75 per cent factor and the physical supply side perhaps a 25 per cent factor in determining the ultimate price.

Julian Street, the writer, tells that a friend of his, who was motoring in France, stopped at a pleasant inn for luncheon. Upon examining the wine list, he was surprised to find that the wines of poorer years were priced higher than the wines of good years.

> "What is the reason for this?" he asked the proprietor.
>
> "It is simple, monsieur," replied the other. "Many American motorists stop here, and Americans know nothing about wines. Always they order the most expensive. By marking up the prices of our poor wines, we sell them profitably to strangers, and at the same time save our best wines for our regular clients."

Not only are values mental. What is more, they are largely emotional. You want a thing because you want it. You may think of reasons for it to justify your desires to your friends or to yourself. The desire moves you to buy.

A young man just out of a New England college went South with his father and $25,000 in the spring of 1925. By October of the same year they bought and sold and kept on buying and selling land in Florida until they were worth on paper $400,000. Six months later the boom had collapsed. Not only was the $400,000 wiped out but also the original $25,000 from New England.

Looking on from the outside one would think that intelligence, reason, or common sense would dictate that when they had $400,000 they would have taken half of it and put it into cash or prime securities. But reason apparently plays no part on such occasions.

Instead there probably appeared visions of $4,000,000 in another six months.

The same thing happened not once but a millon times during the rapid inflation from 1927 to 1929.

The New York Stock Exchange is perhaps the most sensitive large barometer of values in the United States. Sellers and buyers in large numbers are constantly face to face every moment of the business day. It is a constant balance or change of balance between the number of sellers and buyers. If the number of sellers increases and the number of buyers decreases, prices go down. If the number of sellers decreases and the number of buyers increases, prices go up. Psychological values are constantly changing and in a very sensitive manner. The balance between buyers and sellers is hung on a very fine point.

Psychology in national affairs. Laws enacted by legislative bodies, policies pursued by governmental executives, and decisions rendered by judicial courts so broadly and profoundly affect social and business behavior of the people of a country that they constitute some of our most far-reaching and serious psychological problems. They are in the last analysis problems in human behavior. Difficulty in enforcement of the laws, success in execution of policies, and rightness of decisions hinge upon how they affect, stimulate, or antagonize the basic urges and motives in human nature. Success or failure of many laws or public policies could be foreseen in the light of their obvious effect on the make-up of people and their probable reaction to these laws and policies. Examples are the prohibition amendment and its subsequent repeal, the enactment of the NRA (National Recovery Act) and the AAA (Agricultural Adjustment Act) and their later invalidation by the Supreme Court. Laws are difficult if not impossible to enforce against the desires and self-interests of a large proportion of the people.

You may make laws temporarily but you cannot change the fundamentals of human nature in a day or a year and thus far nothing opposed to human nature has succeeded.

Benjamin M. Anderson, economist of the Chase National Bank and keen analyst of human behavior in its economic aspects, has pointed out that

> It is difficult to exaggerate the importance to the country of the motives and attitudes of the men who have the management and

> proprietary interest in the industries of the country. Leadership of economic activity rests with a body of dynamic men, enterprisers, risk takers, planners, men fertile in new ideas and men quick in the appreciation and evaluation of new ideas. The profit motive and the desire for the accumulation of wealth are very powerful with these men. These are not their only motives. They desire also the approbation of their fellow men. They desire triumph in competition. They desire power. They find an immense satisfaction in achievement and in efficient work. They have the "instinct of workmanship." But these motives are found also among men who choose other careers than the business career, and the distinguishing motive of the business man, as compared with the man in certain of the less lucrative professions, is a much greater relative intensity of the profit motive. The scholar may express his personality in a book which he hopes will live. The creative business man expresses his personality in the development of a business which he hopes will live. And in order that the business may be created and may grow and live and may continue to express his personality, he must be able to acquire and to conserve economic resources. It is not necessarily profit for its own sake, but, in part at least, profit and wealth as instruments for carrying through his creative purposes (*The Chase Economic Bulletin*, August 6, 1935).

The great depression of the 1930's has gone down in history as the deepest and longest depression in the 160 years of the United States as a nation. We can only speculate concerning the possible effects of laws and policies upon shortening or lengthening of periods of prosperity and depression. Excessive interference with the normal operations of human nature in a reasonably free society interferes with prospects of normal business profits and therefore with the motive of self-interest. And self-interest is one of the two or three most potent drives in human nature, which accounts for perhaps 90 per cent of what happens in business and half of what happens in the world generally. Self-interest as used here obviously does not mean, and must not be confused with, selfishness. True or enlightened self-interest requires interest in others; it requires in fact a balance between concern for self and concern for others. It is not merely coterminous with one's self but includes one's wife or husband, one's family, one's community, and even one's country.

The whole philosophy of a socialistic, communistic theory of society versus an individualistic, entrepreneurial theory of society rests ultimately upon what are the drives, the I-wants in human nature, and how they promote or retard action and effort.

Psychology in international relations. What are the motives in human nature which maintain amicable relations between peoples, or drive them into conflict and war? Are they not the urges, the I-want's connected with self-interest, with struggle for economic and political power, with expansion and development of the commercial life of the nation? Study the origin and history of any war and see if that is not the case. The seeds of war are often sown in the peace terms of the preceding war. The victor insists on saddling too severe terms on the vanquished. Unless the vanquished is crushed beyond recovery, it is of the essence of human nature to raise its head and strive for self-maintenance and power.

The psychology of war has two phases: The motives which drive the nations into conflict and the psychology of propaganda to keep war emotions at a high pitch. We shall not take space to discuss at length or to illustrate these phases except to cite the motives given by America upon her entry into the World War and by Italy at the beginning of the Italo-Ethiopian War.

Out of what motives did America go into the World War? In his address to the Congress, April 2, 1917, President Wilson, in recommending that a state of war be declared said,

> The world must be made safe for democracy.
>
> . . . We must put excited feeling away. Our motive will not be revenge or the victorious assertion of the physical might of the nation, but only the vindication of right, of human right, of which we are only a single champion.
>
> The wrongs against which we now array ourselves are no common wrongs; they cut to the very roots of human life.
>
> Our object now, as then, is to vindicate the principles of peace and justice in the life of the world as against selfish and autocratic power and to set up among the really free and self-governed peoples of the world such a concert of purpose and of action as will henceforth insure the observance of those principles.

These are eloquent words. In plain terms, we went into the war to save our necks. The American people had pictures in their minds of submarines coming up into New York harbor to blow up our ships and our buildings; they had pictures of airplanes dropping bombs on innocent men, women, and children on Fifth Avenue.

America was a non-aggressor participant in the World War. What are the motives of an aggressor nation?

On October 2, 1935, Premier Mussolini addressed over the radio the Italian nation and the world at large. He said:

> A solemn hour is about to strike in the history of the fatherland.
>
> Twenty million Italians are at this moment gathered in the plazas

> of all Italy. It is the most gigantic demonstration which the history of the human race recalls.
>
> Twenty million men, but with one sole will—one sole decision.
>
> . . . When, in 1915, Italy united her forces to those of the Allies, how many cries of admiration, how many promises there were!
>
> But after the common victory, to which Italy had superbly contributed with 670,000 dead, 400,000 maimed, and 1,000,000 wounded—when the nations gathered around the table of avaricious beasts, to us fell the crumbs of the sumptuous colonial booty for the others.
>
> During twenty years we have been patient, while there grew around us a ring which wishes to suffocate our unbreakable vitality. . . .
>
> To acts of war we shall respond with acts of war.

On October 11, 1935, 51 nations, which included all the members of the League of Nations, with the exception of the two nations concerned, and Austria and Hungary, voted that Italy was the aggressor in the war against Ethiopia. What are the driving forces in a war of aggression?

Methods of controlling human behavior. In broad terms, the means through which the behavior of others in a free democratic society may be influenced or controlled fall into two large categories, between which, however, the line of demarcation is not hard and fast. These two are education and salesmanship. Education in this comprehensive sense includes formal education in the school, informal education in the home, and religious and other types of education. Salesmanship broadly includes not only activities directly connected with selling, but it also includes all types of negotiations in business designed to modify the behavior of others; the effort to win acceptance for ideas and lines of action; in short, the art of appeal and persuasion designed to convey impressions and cause acceptance of ideas.

From the standpoint of numbers of persons engaged in teaching and selling as their sole occupations the importance of these two instrumentalities is impressive. From the standpoint of the efforts of all other persons who from time to time find it necessary or desirable to influence the behavior of their fellow men it is just as impressive. In round numbers, there are 5,000,000 sales persons, 1,100,000 teachers, 100,000 lawyers, 100,000 ministers, 100,000 writers, 100,000 professional entertainers. Here we have 6,500,000 persons whose chief occupation is influencing the behavior of others. But, in addition to that, all other persons attempt, from time to time, to influence others or try to secure acceptance for their services, their ideas, or their personalities. The head of every business, large or small, must negotiate transactions with others. Every one of the 6,300,000 farmers has something to sell. Waiters, cashiers, meter-readers, telephone operators, delivery people and many others engaged in numerous occupations—all render service which requires the influencing of others, whether it be in an educational sense or in a selling sense. If there is anyone who thinks he never sells anything or tries to influence anyone, remember that every young man when he marries has tried to present himself as a desirable life partner, and every maid has used her God-given graces to produce a like effect.

Close observation and study of the factors that influence ourselves and our associates reveal the subtle ways by which it is possible to guide and influence thinking and behavior of others. I am engaged in conversation with a business executive whom I know from long years of contact to be firm and independent in his own thinking and apt to be antagonized by direct command or affirmation to follow certain lines of procedure or accept certain lines of thinking. Knowing these facts, I am able to lead him in my direction of thinking through questions which I put to him in the course of our conversation so that I am leading him to do his own thinking rather than attempting to force him by direct assertion which might ruffle him and cause disagreement with my ideas. I merely lead him and make him solve his own problem by guiding questions and moderate statements with qualifications, and by starting with a statement about the matter under discussion on which we both agree. The valuable thing to learn from psychology is "psychologizing" the other fellow and the situation you are trying to solve.

Summary of problems. Let us be more specific about the problems. All young people want to understand themselves and be able to control their own behavior and actions, so as to make the most of themselves and have the greatest amount of enjoyment throughout life. They are, first of all, concerned with their own behavior and secondly with the behavior of others. They are not only interested in controlling their own behavior, but, as they take their place among their fellow humans, they are of necessity increasingly interested in controlling the behavior of others. It may range all the way from as easy a task as inviting a friend to dinner or asking him a question, to as difficult a task as selling a $100,000 life insurance policy or asking his lady-love to marry him.

At 14 or 15 years of age the average individual has already acquired a great deal of the control of his routine behavior. He has already acquired the basic habits of bodily movement and the use of his senses and their coördination with muscular control. He is, however, continuously interested in the development of habits to serve most fully his purposes. He is constantly engaged in learning new things and acquiring new experiences and information. He should know how he may learn, remember, and acquire new experiences and new information which will be most helpful to him.

His work requires thinking, and the more difficult the problems and jobs in life, the more he will need to do creative thinking and to use his imagination.

He will need to be continuously interested in ways of utilizing his energies to the fullest extent. Human behavior is the result of a mixture of emotions, volitions, habits, ideas, thinking, and the like. He is constantly in need of controlling his emotions in relation to his behavior. The proper control of emotions is one of the subtlest as well as one of the most effective ways of controlling one's own behavior and influencing the behavior of others.

As he goes on through school and prepares himself for life, he is of necessity interested in the selection of a vocation for himself, his abilities, his fitness, particularly his interests, his likes and dislikes, and finally he is interested in developing a well-rounded personality and the many complex elements and traits that enter into it.

Thus, Part I of this book deals with the drives of human behavior, controlling routine behavior, perception and the sensory mechanism, control through habits, learning how to think, how to remember, how to concentrate for work, how to use one's energies effectively, how to control feelings and emotions, behavior of self in social contacts, behavior of self toward associates in occupations, selection of a vocation, development of personality, and behavior hygiene. It is evident that the behavior of others can be controlled only through one's own behavior.

Among the obvious problems in Part II are control of behavior of children in the home and in school, vocational and avocational direction, controlling the behavior of subordinates in business, controlling the behavior of abnormals, influencing others through selling, through advertising, through public speech, through music, art, and entertainment, control of public opinion, controlling the behavior of others through religion, and finally, many of the principles of behavior are summarized in the last chapter entitled "The Art of Living."

How to use psychology in a day's work. In order to visualize more clearly the ever-presence of psychological problems and the numberless occasions in which principles of human behavior may be utilized, let us see what takes place in the daily work of a business executive. This is an actual record of my own problems and situations in the course of one day. I aim to greet my people in a friendly manner as I come into my office. To do so I must feel friendly and cheerful myself. To feel so I must have a full night's rest, which means eight hours on the average for me. I must eat moderately, and with it all I aim to cultivate in myself a cheerful, wholehearted, philosophical attitude. I have found that these three factors make a big difference in how I feel and in my attitude toward others and toward my work.

My ways are reflected in others. One of the most inspiring talks I ever heard given by a business man was by the sales manager of one of the leading automobile companies in the United States on the subject, "As the boss is, so is the gang," and I can assure you that this man's organization was an excellent example of that slogan. The effect of example is immeasurable.

I aim to arrive at my office at 9:00 o'clock, or in fact, ten minutes before, which happens to fit my schedule. I have found that not all employees follow automatically an example. After calling tardiness to the attention of several persons who tended to be late, and after doing so without success, I found that there were five persons out of approximately 85 in my organization who did not respond to it. These five were finally told that their employment would terminate at the end of two weeks if there was any further occasion for criticism on the score of punctuality. The result was that two were discharged and the other three have since been regularly on time.

My mail is brought to my desk. One letter from a client asks my advice as to how to answer one of their letters, which relates to a savings plan for employees. The letter asks what should be done with employees who find it difficult to participate in the savings plan and still make ends meet. This is surely a psychological problem. It is a problem in how to handle the employees' appeals properly, and in addition how to keep them loyal and satisfied.

My organization is in need of an additional man. Some ten or twelve young men have been interviewed by others in my office. We are very particular about hiring new persons. All applicants are interviewed by at least three persons in the organization. We are just as particular in hiring clerks and typists as we are in hiring men and women for more important positions. Business is a battle of brains, and I want brains in my organization. But in addition to brains, I want two more traits above all others, personality and industry. Each applicant must fill out a form which has been carefully prepared and calls for information which we want about each candidate. Past performances in school and occupation are required and are very important. People do not as a rule change quickly or materially. We know that people's past history tells more about their probable future than almost anything else. Life insurance examiners go by ancestry—the length of life and personal history as much as anything. Several persons who have come into our organization have told me that I was the only employer who asked about their scholarship. Why do I ask? I know from my psychology what correlation there is between brains and business. I know that alert intelligence is one of the two or three most important requisites in executive, creative types of work. The result of careful selection and supervision has been a well-knit, efficiently operating organization.

Next, I discuss with one of the men in the organization a certain job on which he has been working. I have an important criticism to suggest. I always make it a point whenever I have criticisms to offer—and the more severe, the more I aim to do so—first to point out the good features of the work done, and then to lead to the adverse suggestions which I aim to follow with constructive suggestions. That you can catch more flies with honey than with vinegar is sound psychology. Experiments have shown that people respond better, more constructively, and effectively, when criticism is combined with a recognition of the good qualities.

During the course of each day I endeavor to set aside a certain amount of time for uninterrupted, creative work, and I urge, as far as possible, everyone else in our organization to do likewise. There is too much waste in the average office due to mutual interruptions on matters about which they must consult one another, but which might better be concentrated within a shorter interval of time when several matters may be discussed at once.

You ask, what does psychology have to do with all this? You may even say that what I have outlined is just common sense. Perhaps! I have, however, two remarks. One is that many people do not apply common sense to common things. And the second is that the principles here implied and later discussed in this book are sound psychology based partly on experiments and partly on experience. Or you may further say it is psychology of a sort but not scientific or experimental psychology. My answer is that the most useful thing which I learned in my graduate studies in psychology, which consisted very largely of experimental work in the laboratory, is the scientific habit of mind and attitude toward problems. This has been extremely helpful to me in making open-minded, fair analyses of human behavior situations in psychological terms. Furthermore, the successful solution of these situations has depended upon the correctness of these analyses and the application of sound principles of human behavior which either have been developed out of experience or corroborated by laboratory experiments and scientific data.

We aim to apply psychological principles in our analyses. We, of course, do not attain this 100 per cent. To use principles of human behavior in daily work requires careful study and continuous attention to doing so. You may learn a principle in five minutes, but take a hundred situations to learn how to apply it well and above all to be sure that you do apply it.

Present limitations of psychology. What we know scientifically about controlling human behavior based upon laboratory or other controlled experiments is woefully inadequate. As a matter of fact, we probably know more about controlling human behavior as a result of principles or rules formulated, not less surely, on the basis of observation and analysis of human behavior in the raw. To be sure, much experimentation has been done since the first psychological laboratory was established by Wilhelm Wundt, in Leipzig, in 1879. Many kinds of human behavior, reactions, and phenomena—mental and physical—have been described and measured. Principles and laws have been deduced from them. However, it is one thing to formulate a principle; it is another thing to use that principle in controlling human action in practical affairs, the affairs which make a difference. One is reminded of the stutterer who had learned to say perfectly, "She sells sea shells," but unfortunately he did not find many opportunities to use it in everyday conversation.

Perhaps the chief objective of your study of human nature is to learn to analyze in psychological terms the situations in which you play a part—your conversations, your negotiations, your home, your wife, your husband, your children, your friends, your dealings with servants, your dealings with your superiors, your dealings in buying and selling, and so on *ad infinitum*. Your studies of principles, methods, experiments, and scientific data of all types should be pursued from the point of view of helping you to make such analyses.

First, learn through these analyses what are the inner urges in other persons as well as in yourself which operate in a given situation.

Second, decide what you want the outcome of a given situation to be.

Third, analyze the approach, the appeals, the ways of negotiation, the ways of talking with the persons concerned, so as to influence them as well as yourself in the direction of the desired goal.

You will probably learn that one of the basic principles of human nature is not to force the other person except rarely, but rather to guide his thinking toward the goal you desire—toward the right goal. Therefore make sure that the goal you desire is the right goal for you as well as the other persons in the situation. Whether it is winning your sweetheart, or getting on with your wife or husband, or your neighbor, on the one hand, or selling a million-dollar insurance policy, or negotiating the sale of a hundred million dollars' worth of automobiles, on the other hand, analyze the situation in psychological terms. We shall then certainly agree with Pope that "the proper study of mankind is man."

Questions for Yourself:

1. What have been the most vital problems in your life? Which ones stand out as really mattering to you? Why did they matter so much?

Take at least two such situations and trace them through with the help of the following questions. Do this as completely and accurately as you can. This may be a written problem to be handed in or prepared for class discussion as directed by the instructor. These situations may be too personal for a class discussion, in which case they may be written and handed in under a code number known only to the instructor.

(a) What were the moving forces, inner urges, or determinants, both external and internal?

(b) What help did you get from others, if any, to solve these problems—that is, from friends or teachers or professional advisers?

(c) How did you solve them? What were the guiding principles, if any, involved? To what extent were the problems solved by rational analysis, and to what extent by finally doing what more or less blindly your inner nature desired?

(d) To what extent were your solutions in accord with, or counter to, the apparently rational advice of members of your family and others?

(e) In the light of your present knowledge and experience since these problems arose, did you solve them in the best manner?

(f) What would your advice be to others now facing similar situations? What are the principles of human nature and human behavior on which your advice would be based?

2. An alternative or additional problem—written or for class discussion, as directed by the instructor—is to select the two or three outstanding events on the front page of a current newspaper and analyze them by means of the above questions. The questions would be merely adapted. For example, (a) above would be: What are the moving forces, urges, or determinants in the persons concerned that brought about these events?

PART I

CONTROLLING THE BEHAVIOR OF SELF

CHAPTER II

I–WANT'S AND DETERMINANTS OF HUMAN BEHAVIOR

People's wants are the power that control life. What are these wants? What makes people act as they do? And why do they behave like human beings?

You have seen beans or potatoes grow. You have seen how the sprout pushes its way four, six, or eight inches up through the soil, breaks the hard crust, and actually lifts several square inches of it. What is this push, this drive? Since we do not really know, the best answer is to say it is the urge of life. The sprout spreads and grows for several weeks, and then blossoms. The beanstalk produces pods with little beans inside and the potato vine produces new potatoes at its roots. Soon thereafter, the beanstalk and the potato vine wither and the new beans and potatoes are in turn ready to start all over again. That is the cycle of life.

You have all seen babies grow. At birth they are able to breathe, to cry when hungry or uncomfortable, to eat, digest, and excrete, to wave their arms and to kick with their feet. The baby grows for several years. At adolescence the blossoming period begins. This is followed by adulthood, parenthood, and death. Lengthen the four months' life of the potato into fourscore years of man, and you have two parallel cycles. What causes the baby to do all these things? Again we can only say it is the urge of life, and this urge we may split up into five basic urges, drives, or I-want's, as I like to call them. Because babies are humans and not beans or potatoes, and because they later become self-conscious, we may express these basic psycho-biological urges in ourselves in self-conscious terms as I-want's.

DOMINANT HUMAN URGES

Basic inner drives. Analyze your own behavior, your own innermost desires, and then analyze your observation of infants and children and see if you do not agree that your acts, your behavior, the whole drama of your life, springs out of these five fundamental I-want's:

1. I want food—I cry for it in infancy and get it myself in adulthood.
2. I want comfort—the feeling of bodily and mental well-being.
3. I want a mate—home, children, and all their appurtenances.
4. I want power—control over things, forces, and people.
5. I want approbation—good-will and admiration of my fellow humans.

Can you think of anything that you do or desire that does not spring out of these five inner urges or contribute directly or indirectly to satisfying them? Let us look at them in turn.

The first two—food and comfort—are the indispensables of self-preservation. Life cannot go on without them. In primitive conditions practically all of man's efforts are devoted to them. In present-day complex society, fully one-third of all people gainfully employed are engaged in producing and distributing food and at least another third are engaged in providing the comforts of well-being, shelter, and clothing.

Correspondingly, one-third of the income of the average family goes for food and one-third for housing and clothing. The remaining one-third is spent partly for the desires under number three and especially under four and five. As civilization advances and standards of living rise, a smaller proportion of income is spent for food and a larger proportion for the other needs.

Due to the conscious strivings of human beings as contrasted with animals, actually by far the largest bulk of our efforts is devoted to satisfying the desires above the bare necessities of the first three. Income of the average family in the United States is approximately $1,700 a year. The satisfaction of the first three wants of food, comfort, and offspring on a mere animal level of existence might be as little as $300 or $400 per family of four persons, leaving four or five times as much effort which humans are willing to put forth for a higher level of living.

How powerful the prime movers are in man! As this is being written on the seventeenth anniversary to commemorate the Armistice of the Great War to end war, the nations are rearming, clouds are thickening, soldiers are on the march, and battles are raging, the basic forces within the Old Adam are as desperately striving for power, for achievement and ultimately for bread, comfort, and race as of old. And all this is going on despite the two minutes of silence in which millions of men and women remember their dead, picture the ruin of war, and recall how the boyhood of the world was slaughtered in heaps.

Each urge has a self-interest aspect. It is *I* who wants food; it is *I* who wants comfort, a mate, power over my environment, and approbation of my fellow men. The self-interest aspect is what gives these urges their force. The moralist should not deplore this. True self-interest is enlightened self-interest, and enlightened self-interest requires fair and proper concern for the interest of others; and that arises out of the fact that man does not live alone. If self-interest were not present in these primary drives the individual would not live. It is well to recognize at once in your study of human nature that self-interest plays a lion's share in your own behavior and in the behavior of others. Practical understanding of this basic principle and the skillful analysis of human situations in the light of it are absolutely essential in the effective control of others. Its ramifications are myriad. Success in dealing with men depends upon alertness in recognizing its many forms and inventiveness in devising ways of appealing to it.

Part played by each urge. In primitive society the family is largely a self-sufficient unit. It secures its own food, builds its own hut, and makes its own clothes. Practically all activity is confined to, and needed for, satisfying the first three basic wants.

In more highly organized society there is division of labor, and the more highly society is organized, the more specific are the tasks and the more widely are they distributed. A given person performs only one task and secures his food, clothing, and shelter from others by exchanging his services for theirs.

The mating urge colors directly or indirectly most of the behavior of human beings. A large part of the behavior of each sex is directed toward the opposite sex. To a large extent, men live for women and women live for men. A world of all men or all women would be so different that you could hardly imagine it.

Even eighteen years of Soviet Russia have not been able to eradicate from human nature the normal manifestation of, and appeals to, the mating urge. Under the Soviet regime there was to be only biological mating; there was to be no love, no romance;

children to be sure had to be produced but they were to belong to the State. Milly Bennett wrote in the *New York Times* as follows:

> The young husband might be sent off to the wilds of Kamchatka to build a railroad; he must not whimper at the separation from everything he held dear. To hesitate was tantamount to counter-revolution, an evidence of bourgeois decadence. The young mother who wanted to make a home was told that her children were far better off in a nursery and she more patriotic in a factory. To convince her, her bread card as a housewife allotted her so small a ration that she was often forced to become an industrial laborer.
>
> Those were the days when the daily press printed photographs of the smiling woman ditch-digger, the shock-brigading girl miner, the champion female hod-carrier. Where the State so violently disrupted the family, it was not wise to inculcate too great a reverence for it. . . .
>
> Until a short time ago it was quite a simple matter to get a divorce in Soviet Russia. Being bored with your mate, you dropped in at the Bureau of Vital Statistics and said you wanted to be free. Three rubles was the charge, and on payment of the fee a postcard was sent to notify your erstwhile spouse. Whether the card arrived or not did not matter; you were separated.
>
> Now, abruptly, all that is changing. The Council of the Peoples Commissars has abolished the postcard divorce. The influential Soviet press speaks now of the responsibilities of marriage, of the need for family life, of the mutual duties of parents and offspring. Gone is the rhetoric of yesterday which hailed the dawn of a new freedom in the Soviet for the convention-bound female of the bourgeoisie. A new code of ethics is forming (Milly Bennett, *New York Times Magazine*, Nov. 10, 1935).

The efforts of Soviet authorities to de-fashion the women of Russia is reported by Ralph W. Barnes, correspondent of the *New York Herald Tribune* in Moscow, to be a dismal failure. The textile designers had to give up their futile efforts to popularize dress goods figured with cogwheels, electric bulbs, tractors, factories, railroads, gas masks, or soldiers. Elizabeth Hawes, Vassar College graduate and American fashion expert, concluded after her visit to study the clothes problem that "Apparently when it comes to clothes, Soviet women—the majority of those who live in the cities, at least—are not prepared to be made the objects of clumsy experiments . . . the women themselves have forced the experts back to Paris and New York for their models. . . . Take the question of trousers. I am told that some women members of the Moscow police force actually resigned rather than wear the trousers which were prescribed as part of their uniforms. In fact, the opposition to trousers was so strong among the women that finally the authorities were forced to prescribe skirts." Aristotle had a keener perception of sex psychology, for he held that women should not strive to be more like men but rather cultivate their dissimilarities.

Nature produces lovely flowers with beautiful colors and delicate scent as her way of reproducing the cycle of life. The basic urge of mating in human nature, with its flowering into romance, love, and family affection cannot be changed by decree.

Unless you recognize the fundamental character of these urges and their power in human life, you simply do not understand human nature and are incapable of successfully influencing your fellow men, or dealing with them. You cannot kill the eternally feminine or the eternally masculine in human nature.

John Howard Payne, famous actor and playwright a century ago and the first American to attract wide attention in this field in England, is known today throughout the world not for his plays or his acting, but for the simple song "Home, Sweet Home" which he wrote in 1823. A hundred thousand copies were sold the first year. These simple words touch the heart strings because home, be it ever so humble, is where the three most basic wants for food, comfort, and a mate find their satisfaction.

The desire for power, for achievement, is the dynamic drive within leaders of industry and government. The inner urge in an Edison, a Ford, or a Rockefeller is not merely the possession of money or property, or the desire for houses, buildings, or estates; it is rather the drive, the I-want for power over man and nature, the drive for achievement, the satisfaction of accomplishment.

Why does A leave a given organization to take another position? He will receive a thousand dollars more salary which he does not need for the ordinary comforts of living. Why does B leave although he is thoroughly contented with his work, enjoys his associates, and will receive no more salary in his new position? He leaves because he regards the new connection as the chance of a lifetime to make his fortune, so that he may be situated independently early enough in life in order to do the things he would thoroughly like to do. The central urge in either case is the desire for power.

The inner drive in political leaders is not primarily desire for food, clothing, or shelter, nor even service to mankind; it is rather the insatiable urge for leadership, for power over people, for achievement, just as it is in the captain of industry. A leader arises in a primitive group of people when he assumes initiative and acquires power over his environment.

The craving for approbation is particularly strong in a complex society. As civilization advances, the desire for approval and admiration becomes an increasingly powerful urge. Perhaps four-fifths of all effort by the civilized peoples of the globe go for the super-wants above a bare existence, for securing the admiration of fellow humans, for keeping up with the Joneses.

Whiting Williams, one time vice-president of the Hydraulic Steel Company in Cleveland, put on overalls and worked for several months each year for a number of years in mines, steel mills, and factories, to study at first hand the inner workings of laboring men. His observations and analyses led him to conclude that the desire for power and approbation is among the prime movers in the behavior of workers.

In his book, *Mainsprings of Men,* Williams (1925) concludes that the mainspring is the wish for worth, to enjoy the feeling of worth as a person among persons.

Relative strength of urges. There is no satisfactory measure of the relative strength or importance of the basic drives in human nature. If we could fathom how much behavior arises out of each, or determine the importance of the behavior which results from each, we might have such a measure. Several years ago I attempted to secure a relative evaluation of forty-four so-called motives of action or external appeals for action. I asked seventy-four men and women to evaluate them on a scale of zero to ten, under instructions as follows:

> Ask yourself in connection with each one how important it is in determining your own actions from day to day. Write 10 after the very strongest motives, and a number between 0 and 10 after the others, according to their relative strength or importance.

If we group the pertinent motives under one or another of the five basic drives, we find their relative strength as follows:

1. *Food*—appetite	9.2
2. *Comfort*—health, pleasure	8.7

3. *Mating*—love of offspring, sex attraction, parental affection	8.9
4. *Power*—ambition, possession	8.5
5. *Approbation*—gregariousness, personal appearance	7.9

All five urges are strong. The first three, however, are somewhat stronger than the fourth and fifth. This method of evaluation is not entirely satisfactory. It is difficult to estimate by introspection the specific application of each in daily conduct and determine its share in producing action. It would be interesting to obtain objective measures of the relative importance of the basic drives in daily behavior. An approximation of such a measure is the number of readers attracted by various appeals in advertisements. In the course of a continuing program for ascertaining the readership of advertisements during a period of four years, in which more than 200,000 persons were interviewed, T. M. Shepard, in charge of this work for Daniel Starch and Staff, concludes that the advertisements most frequently and completely read are as follows:

(1) First are advertisements of food and beverages. Typical of this group would be one which displays a cake in a very realistic manner and contains recipes which many women read thoroughly.

(2) Advertisements read next most frequently are those which contain some form of sex appeal. Examples are realistic appeals of, "Lovely White Hands," "A Skin You Love to Touch."

(3) Comfort is third, typified by advertisements setting forth how easy it is to use a refrigerator. They contain pictures of persons pointing out the merits of an automatic refrigerator to someone else. Other advertisements in this group show persons displaying the attractive features of an automobile or how easy it is to wash clothes with a given brand of soap.

(4) Power—advertisements next in attracting readers are, for example, insurance advertisements which display an appropriate picture along with headlines setting forth the advantage of the power to do what the reader may wish to do when he gets older; or pictures of a man and wife going on a voyage, traveling in foreign lands; or illustrations of the satisfaction in educating the children; such advertisements contain a picture showing a child studying at home or a boy or girl on a college campus.

(5) Approbation—advertisements with a picture and headline showing approbation of persons higher up in the social scale receive the next largest amount of readership.

The basic drives of human beings furnish the motive power. The particular manner in which action occurs, the particular patterns of behavior, are determined by additional factors which we shall call determinants, chief of which are two: first, the human mind-body organism, as distinguished from the organism of animals; and second, external environmental factors, including other human beings.

These three types of factors which determine why we behave like human beings may be illustrated by hunger and food-getting. My search for food or my work at a job, which is just another way of getting my bread and butter, is motivated by the inner urge to satisfy hunger. Putting food into my mouth with my hands is due to the fact that I have a certain kind of body with a flat or receding mouth. A pig has no hands but has a projecting mouth for getting food directly. The fact that I learn to sit at a table and use certain utensils and observe certain courtesies is due to a predetermined native intelligence and to insistence on these procedures by parents and others, as the external factors.

Determinants of Human Behavior

Bodily determinants of human behavior. It is obvious that a fundamental determinant of human behavior is the possession of a characteristic bodily organization that compels man to be human rather than canine or bovine or like any one of hundreds of other animals. Man's physico-mental organization is such that his character is definitely and predominantly human, however much his protoplasmic constituents may be the common denominator of all living creatures. The possession of a human body implies the possession of what we call mind or mentality. The interaction, the coördination, the integration, or simultaneous activity of these seemingly two, yet ever in effect one, establishes the person designated as *I* or *you*.

This human body-mind that is the self has certain physical characteristics which are important determinants of behavior. It has a certain well-developed nervous system, highly specialized sense organs, and certain muscular and bony structures. It may be well or poorly integrated, skillful or clumsy in action, competent or helpless, intelligent or stupid, male or female.

Mental determinants of behavior. Our behavior is determined not only by our bodily mechanism and organization but also by the concomitant mental determinants and traits. The fact that I behave like a human being rather than a dog or a horse is that my mental characteristics are what they are. My mind-body, organization is able to remember more fully, to learn more completely, to analyze situations more minutely, in short, to do better than any animal can all of the things that we associate with greater intelligence and greater self-determination. The manner and extent of operation of these mental determinants is the subject of the remainder of this book.

And now, a word about self-determination. This book is written on the supposition that within certain limits each person can control and determine his own behavior, that he can steer his own course and build his own career; it is written, as the title indicates, from the point of view of control. The metaphysical question, whether man has a free will or whether all of his behavior is a mechanical treadmill, whether he is a mere automaton, we shall not discuss. Whether it is all a grand illusion, we shall leave to the philosophers to deal with.

How much can I control myself and others? How much can others influence me? In a realistic and practical sense, you and I feel that we can and do determine our acts. I am eating my breakfast and I fully believe that I can decide whether or not to eat another piece of toast. I can choose to go on the 7:59 or the 8:07 train. Whether the philosophers make it all out to be a grand illusion or not, at any rate I am enjoying the illusion, and think and act as though it were a reality. And so I carry on under the impression that two of the chief determinants of my behavior are willful self-determination and general intelligence.

Human behavior depends in large measure upon the native intelligence with which the individual is endowed. This undefined "something" that we all use, talk about, but cannot define, enables us through a plastic nervous system to extend our control over environment through tool making. This tool may be a simple stick sharpened into a spear with which to intimidate and dominate, or a complicated airplane to negotiate distance at great speed; a simple pencil to record our thoughts on a slip of paper, or a complicated printing press to record them on thousands of newspapers, magazines, or books.

A plastic nervous system also makes learning possible, thereby giving another means of control into the hands of the person who has the intelligence to acquire and use it. Knowledge in and of itself, however, is an ineffective tool until properly and effectively applied. The tools, learning and the knowledge derived therefrom, are not endowments with which one is born; only the initial potentialities which make them possible are inherent in the human being.

Our environment provides external determinants of behavior. Behavior depends not only upon drives and urges within the organism but also upon incentives and stimuli presented from without, and made into a motive by the individual for specific behavior. Motives *push* from within; incentives *pull* from without. Whether I speak English or Chinese, or use knives, forks, and spoons, or chopsticks, depends on where I am brought up. Whether I become a shopkeeper or a bookkeeper or a money changer also may depend upon my environment. Whether I speak good English or poor English, or whether I am a merchant-chief or a peanut vendor may depend more upon me than upon environment. Suffice it to note that external conditions and forces, chief among which are our fellow human beings, play a part in our behavior.

The Instinct Theory

You have read the word "instinct" many times. You have probably a hazy idea of what it means. Such descriptive words as "unlearned," "native," "universal," come to mind. We think of instinct as something inherited by animals and man that causes certain kinds of action to happen full-formed at a proper time—nest building, food seeking, tree climbing. Some authors call it an "inherited pattern reaction," others "prepotent influences," while yet others deny its existence entirely and fill pages talking about something that in the end they maintain does not exist as such. William James (1890) late in the last century gave a long and detailed account of these supposedly readymade kinds of behavior that appeared supposedly unlearned in the development of an individual. His long list of several dozen instincts credited man with more unlearned behavior than occurred among animals.

E. L. Thorndike (1913), noted educational psychologist at Columbia University, elaborated this list somewhat, reclassified it into the three categories of food-getting and protective responses, responses to behavior of other human beings, and minor bodily movements and cerebral connections. Other psychologists under Thorndike's influence searched for more instincts. A closer scrutiny of existing classifications found weaknesses and contradictions.

William McDougall (1908, 1921), transplanted from England to Harvard University and then Duke University, gave a shorter list of some seven instincts and for good measure accompanied them by their characteristic emotion or feeling tone. Later, he expanded this to some fourteen types of instinctive behavior. More recently McDougall (1933), relegated the term instinct to designate sub-human innate activity, and suggested the terms "native propensities" and "native abilities" to indicate inborn human activities. He cites some eighteen native propensities.

The behaviorists struggled along in more or less inarticulate fashion until John B. Watson (1914), well schooled by experiments with white rats, rose as the leader of behaviorism and denied the existence of all but a very few instincts. Finally, Kuo (1922, 1929), with Oriental imperturbability, went so far as to dispense with all instincts.

However, with the word so commonly used, one must arrive at some commonly accepted meaning for its use. Let us examine the identical or similar components of the various definitions and meanings. Inherited, unlearned, blind, universal are some of the more widely used connotations—all aim at describing behavior, all mean a way of acting that will happen full-formed in a given situation.

When acts supposed to be instinctive are examined carefully, however, they are found to be either very like reflex acts for which only a receiving mechanism, a sensitive, organized nervous system, and a reacting mechanism are necessary, or similar to a complex system of learned and acquired reactions. In either case, the need for the existence of any specific instinct in order to understand human behavior seems negligible. In the first instance, if the instinctive act is a reflex, why not use the term "reflex act"; and in the second, a system of learned reactions, why not consider it the habit pattern which it actually is?

On the other hand, running through many of the definitions of instinct, there is the element of purpose or of service to the organism. These innate acts that have remained are those that have survival value and helped to maintain the individual in his place in the progress of evolution. Those who had these reactions ready when needed, survived; those who did not, perished. The terms the investigators used to describe instinctive acts indicate this tendency to emphasize the "drive" from within or the "goal" from without.

Within the germ cells are "determiners" which chart the way growth shall go. Growth is progress from a duo-celled organism packed with potentialities to a myriad-celled organism, still packed with potentialities, but with many of the original potentialities matured and functioning or quiescent if not completely discarded. Cells have developed into characteristic bone, muscle, tendon, gland, neural structure, according to the plan inherent in the original determiners. The nature of that activity and the form it shall take, however, are determined by the very structure of the creature. Every organ has its specific activity, however simple or complex its manifestations may be. Activity, then, is a capacity of the organism that can be safely described as instinctive. Whether a number of specific activities coördinated into a particular behavior pattern which functions in definite situations constitute a native reaction in the same manner is the question. The hypothesis that inborn connections in the nervous system provide a specific response to certain situations has been called the *instinct* theory.

The instinct theory finds favorable support from two main lines of argument: (1) the apparent relation between growth of the individual and his behavior; (2) the analogy between animal and human behavior.

Instinctive behavior is dependent upon neural connections. It seems reasonable to expect that they will develop somewhat in the manner of the various other parts and organs of the body.

In animals these inherited patterns seem to appear at the moment when they are most useful to the organism. Birds fly when their wings are ready, they build nests, mate, and lay eggs without having seen other birds act likewise. Each animal acts according to his kind and meets environmental situations with ready-made patterns of behavior. True, environment early makes its demands and causes changes in these patterns, but the original tendency to act instinctively was there.

Voluminous experimentation and research with animals, from earthworms to apes, has thrown little light on the best ways for controlling human behavior for more effective living. After all, we are human and expect to act and live as such. The human being is no more successful patterning his behavior on that of another animal than would be the cow trying to be a cat.

However much insects and animals may be able to depend upon instinctive modes of behavior, even a cursory view of human beings will show that learned behavior very soon becomes tremendously important in their scheme of existence. James recognized that learning began very early and also that it was exceedingly difficult to separate the learned from the unlearned in the human being.

Inheritance of Determinants of Behavior

To what extent are the urges, determinants, traits, or factors which determine our behavior inherited? This is, of course, a moot question notwithstanding the mass of experimental and statistical evidence on this problem. As a matter of simple observation, it is evident, of course, that what we are and do is determined to a very large extent by our antecedents. Obviously I am a human being because I have human parents. Human parents have human infants, not calves, colts, pigs, or even monkeys, despite the behavior of our neighbors' children. Chinese parents have Chinese children, not whites or Negroes. South Europeans have children with certain characteristics; and North Europeans have children with slightly different characteristics. The question is, how much am I like my parents and their progenitors in those mental and physical features in which they differ from other persons? How completely have I taken on their characteristics and traits, and how much do I differ from them?

The two most important factors or groups of factors which direct the course of behavior are general intelligence and the urge or will to do. To what extent may the will to do or general intelligence, or the constituent elements that enter into them, be predetermined by inheritance? How far are the achievements of different persons in a given occupation, profession, or business accounted for by inherent abilities and urges and by external factors?

The various capacities and the relative amounts of them with which a person starts in life are derived from the cells from which the individual originates. The differences among these original cells, even when derived from the same parent, are assumed to vary with regard to any potentiality according to the normal distribution curve about the central tendency of that particular parent. Stalks of corn grown from seed taken from the same ear will vary considerably from one another because the seeds themselves, even from the same ear, are different, but yet they will vary around the general type of the parent stalk. It is therefore obvious that children of the same parents will not be completely alike but that they will vary about the central tendency of their ancestors. To what extent does a person make of himself what he does by virtue of his opportunities or by virtue of his inherent make-up?

Whatever the relative shares of hereditary or environmental factors may be, a paramount fact is that hardly one person in a thousand makes all the absolute gain possible for him even in a single capacity. It has been proved over and over again in numerous abilities used in daily occupations that by a little special practice each day their efficiency may be enormously improved. Consequently, while the possibilities of each individual are circumscribed by his original inherited equipment, each one may develop his capacities far beyond the usual degree of attainment. While experimental evidence indicates clearly that under equal opportunities the more gifted surpass the less gifted, yet rarely does anyone do his best or attain his limit even in a single capacity. Life is a matter of competition; let everyone compete to the fullest extent of his abilities.

Questions for Yourself:

1. Are the various urges or drives well-balanced in you? If not, which are relatively too weak, which too strong? How can these excesses or deficiencies be corrected?

2. If environmental determinants play an important part in your behavior and accomplishment, what can you do about it? You cannot modify your environment very much, but you can choose your environment to a considerable extent or resist its influence if it is adverse. How can this be done effectively?

3. To what extent do you make full and effective use of your abilities and aptitudes? Which ones particularly are you not using as fully as you should? It is not the purpose at this point to discuss these problems at length, because they will be analyzed and discussed with constructive suggestions at appropriate points throughout this book. Nevertheless it is desirable to raise these questions now for the reader to think about on his own account or to discuss them with others.

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CHAPTER III

CONTROLLING ROUTINE BEHAVIOR

The urge to be active, arising from energy generated by the growth of protoplasm, begins with the fertilized cell in which every human being must begin life. At first activity is merely cell division and aggregation. But soon growth becomes the development of special formations organized for particular uses. Nerves develop and respond to irritation; muscles stretch and contract; glands secrete their particular fluids. Energy is directed through specific channels toward specific activity.

Activities resulting from this innate urge to use any part of the body proceed in definite patterns during life. Some proceed without conscious intervention by the individual, such as automatic and reflex activities like digestion and circulation. Other activities not only relate the human being to his environment but are more or less subject to his control. The urge to be active, to use the organs of the body, is innate; but the manner in which this activity shall be manifested depends upon both the environment and the individual. Although use of a part is circumscribed by its structure, the individual must control and direct this use in maintaining a comfortable relationship between the inner organization of energies and those encountered in the environment. When once energies have been directed in a pattern which produces this relationship, the individual tends to respond in similar manner in subsequent situations. At first directing this energy may be a highly conscious procedure; but as the pattern of behavior becomes routine, conscious control gradually lessens. In this way each individual develops as best he can the patterns of behavior which will be effective in adjustment.

Walking

The innate urge to use any organ of the body must wait upon maturation, learning, and training for its full expression. The newborn infant has eyes, but they are not used with much precision until the neural and muscular mechanisms have developed enough to permit coördination and fixation. Even relatively simple coordinations necessary for the eyes to follow a moving light or person do not come with complete precision until approximately the fourth month. There are many reflex and random eye movements and eye uses manifested soon after birth, but their effective control and direction for purposeful behavior must wait upon maturation. Investigators seem to agree that in the earlier stages of development maturation may play a more important rôle than practice, and it is not until neural and other structures are relatively mature that practice becomes equally or more important than maturation in the process of developing skills.

Careful observation of infantile responses to stimuli shows a preponderance of random and uncoördinated acts. Controlled and purposeful patterns of behavior are differentiated slowly and unevenly from this early body-wide activity as the infant matures and grows more skillful. Unnecessary and uncoördinated movements are eliminated gradually as successful directed acts are achieved. Dewey (1935) cites the studies of reaching and prehension made by Halverson (1933) as an "excellent picture, in one pattern, of the progress of this increasing control and elimination. Descriptions of the details of the early stages of other patterns indicate that this same process operates for all . . . " (p. 299).

Thus we see the controlled and coördinated action pattern of walking emerge from random and body-wide activity as development permits. Shirley (1933) in studying the development of twenty-five babies found that locomotion developed through the following stages. Individual differences may modify the details but not the broader aspects of the orderly progression. Gaining control of the head and neck muscles so that the head may be moved freely and held on a plane with the body is regarded as the first observable essential step toward maintaining an erect posture. In the second stage postural control moves downward to include the whole trunk and is accompanied by many random movements little directed toward locomotion. The third stage introduces increased activity and vigorous but poorly coördinated efforts of locomotion. Next the postural control of the whole body has progressed so that locomotion by several methods is possible. In the final stage postural control and coördination combined have progressed until the infant has reached the goal of walking. Shirley's findings are illustrated in Chapter XVII.

Even after walking has been achieved, there is a long period of practice necessary to perfect the skill and make it routine, dependable performance. Earlier methods of locomotion are frequently reverted to, particularly in times of stress.

When specific activity has replaced general activity, when controlled acts have replaced reflex and random ones, when skill has been perfected by practice, many patterns of behavior become routine and automatic with little consciousness of the specific elements of the pattern involved. Thus in walking, the unified activity pattern has been perfected as a useful skill which usually functions automatically whenever the need for locomotion arises.

After you have learned to walk, you rarely need to consider the sequence of steps involved. In fact, attending to the elements of an activity which has become automatic tends to throw the sequence out of order, and like the centipede in the oft-quoted rhyme, you too fall "distracted in the ditch, considering how to run."

TALKING

In vocalization as in locomotion development proceeds from general and reflex to particular and controlled activity. The first stage of the development of talking is initiated with the reflex cry which soon after birth may lose its undifferentiated character and become expressive of hunger, pain, discomfort. By the end of the second month the second stage of progress toward the spoken word has begun, although the first stage has not yet ended. The stage is variously described as the babble or lallation. It consists largely of gutteral sounds having little expressive value, which result from modifications in structures involved in articulation. The third stage shows the transition from the babble to imitation of speech heard, and finally expression.

Comprehension precedes use of words, but usually toward the end of the second year the child has made considerable progress toward using words in a definite effort to communicate. Through practice the child learns to imitate the language he hears spoken and normally develops routine language behavior by the third year which approaches adult skill in verbal reactions.

There is wide individual variation in the age at which serviceable routine language patterns are established. Environmental factors are tremendously important, since a child must use the language common to those about him with whom he needs to establish communication.

Both locomotion and vocalization are achieved only as maturation and use facilitate the development of controlled activity. Mental development is assumed to occur concurrently with physical development, but it is not safe to postulate too close a relationship. In general investigators have found that mentally alert children walk and talk at an earlier age than do those who are mentally slow or defective, but from existing data we are not certain as to which is cause and which is effect, or if a causal relationship exists. However, the patterns of routine behavior developed by the individual may be regarded within limits as indicative of mental ability. Hollingworth (1927) cites a study made by Mead and Terman which indicates that the mentally precocious children learn to walk and talk at an earlier age than do the normal or the definitely feeble of mind, and concludes that language is "one of the most direct indicators of that general level of capacities which we use the word intelligence to summarize."

The Nervous System

Knowledge of the nervous system and its functions is highly desirable in an adequate background for studying psychology. Although a certain modicum of knowledge on the part of the student is assumed, we will consider briefly certain bodily mechanisms which seem fundamental to activity essential in adjustment.

Excitability and **conductivity** are properties which characterize all neural tissues. The property of excitability makes it possible for stimuli to affect the organism. That of conductivity makes possible the transmission to various parts of the body of impulses initiated by stimuli, which may be chemical, physical, or electrical.

Plasticity and **retentivity** are other properties of organized nervous systems which play an important rôle in human learning and behavior. A certain plasticity of organization is essential to the effective translation of stimuli into activity and the formation of behavior patterns. These patterns must also be retained if we are to learn and develop routine behavior.

Specialization of functions is an important concomitant of the more intricate and highly organized nervous system. Just as different parts of the body have their characteristic work, so too do cells of the nervous system have their particular tasks. Thus some nerve cells, called *sensory neurons*, serve by responding to stimuli received through sense organs and by forming intricate connections with the brain and spinal cord. The delicate fibers of the sensory neurons connect with this central nervous system every sense organ or specialized receptor in the eye, ear, tongue, nostrils, skin, muscles, tendons and joints, and internal organs.

Closely allied with the system of sensory neurons are the *motor neurons* which connect with the response organs, or effectors, such as muscles of various parts of the body and internal organs.

Between the incoming sensory and the outgoing motor neurons, there are numberless *central neurons* which form the tremendously complicated interconnecting system upon which so much of our behavior depends.

The central nervous system in the human organism comprises a spinal cord and brain. The *spinal cord* is connected with both receptors and effectors by peripheral nerves and serves to transmit nerve impulses to and from the higher brain centers. It may also serve as a center of adjustment in simple reflex activity. The *medulla oblongata* is continuous with the spinal cord and lies immediately above it. It is a great cable of fibers connecting the spinal system with the higher brain centers. Like the spinal cord it may serve as an adjustment center for nerve impulses which do not need to be transmitted to the brain. The *cerebellum* comprises the two hemispheres situated behind the medulla. It serves in the coördination of muscular activity. Other communicating fibers and specialized adjustment centers are located in the *pons*, a large bridge-like structure lying below the cerebellum. The intricate series of special connecting centers through which impulses must pass to and from the cerebral cortex is known as the *thalamus*. This region is thought to have an important function in the adaptive and emotional behavior of the individual. The *cerebrum* is by far the largest part of the brain in man. It is a super-adjustment center through which behavior may be directed and controlled. The higher mental processes are believed to arise from activity in the nerve cells in the cerebral cortex.

Thus we view the central nervous system as the means of adjustment between stimuli and activity, which may take place at any level from the simple reflex act involving the spinal cord to the complex and consciously controlled activity involving the cerebral cortex. A behavior pattern which requires exercise of conscious control in its formation may later be relegated to automatic control of some lower level. Likewise, activity which has become routine may again be brought under the control of the higher centers for change or revision.

The cerebrum. Little attempt will be made to discuss various theories regarding the function of the cerebral cortex except to point out trends of thought. Investigators have formulated some type of "reflex arc theory" which in its simplest form postulated a stimulus, an adjustment in the neural cells of some part of the central nervous system, and a response. Complex behavior resulted from a more intricate arrangement of reflex arcs, with many of the adjustor cells located in the cerebral cortex. Thus the adjustor cells for vision were located in the occipital lobe, for speech along the lateral cerebral fissure, for muscular control along the central seculus, and so on. Complex mental activities such as thinking and perceiving were also ascribed to cells in definitely localized areas. Many of the theories propounded by investigators will be found to have some variation of the neural arc idea with considerable localization and specification of function.

Studies by Franz, Lashley, Coghill, and others have presented experimental evidence which questions these theories. Lashley's work has been particularly important in formulating a "mass action theory" which weakens greatly, if not actually breaks down, the case for cerebral localization and connections between specific neurons in the cortex. Removal of parts of the cortex has not affected certain motor abilities as would have happened if the old theories of localization had been correct; neither have conscious and intellectual abilities been disturbed by extirpation of areas previously held essential to such activities. Lost abilities have been regained after the removal of parts of the cortex once considered essential. Lashley's careful experimental work was carried on with rats and monkeys, but pathological human cases have given substantial support to the assumption that the situation for both infra-humans and humans is analogous.

Lack of experimental evidence for older theories of brain localization of specific abilities emphasizes the absurdity of the claims of phrenologists who offer to read a man's character by bumps on his head. Not only are there no localized areas for agreeableness, executive ability, selfishness, cheerfulness, and so on, but nervous tissue when used does not increase in bulk enough to produce the elevations and depressions the phrenologist pretends to find so revealing. The doctrines of Gall and Spurzheim upon which phrenology is founded have been refuted for a century or more, yet commercialized phrenology still flourishes to a surprising extent even among people who have access to knowledge which should make them less gullible.

Man as a thinking animal has a more intricate system of central or interconnecting neurons than any other animal. Many of our reflex or automatic activities involve only the spinal cord or the lower brain centers, but our more complex and highly integrated mental activities involve the higher brain centers. The cerebrum is the highly specialized neural organism designed to produce many types of control necessary for adjustment which would not otherwise be possible. Thinking, remembering, creating, inventing, doing, so vital to the best control of self and others, would be impossible or much curtailed without the cerebrum, which enables the human being to produce tools and means to control his own activities and those of others in an ever widening environment.

The peripheral nervous system comprises the intricate network of the afferent (sensory) nerve fibers connecting the sense organs or receptors with the central nervous system, and of the efferent (motor) nerve fibers connecting the central system with the response organs or effectors. Since receptors are our only means of receiving information from our environment, we may well regard this system as providing the knowledge side of life.

The autonomic nervous system, sometimes called the sympathetic nervous system, is closely associated with the central nervous system, and has much to do with the feeling side of living. This system with centers lying outside the spinal cord has the special tasks of innervating all structures not usually under voluntary control, such as vital organs, walls of arteries, glands, and unstriated muscles. This nervous system is regarded as so important in our emotional life that some investigators go so far as to make it the "engineer at the throttle," or some peculiar manifestation of the sole "spring of action," but the person who has not lost sight of the *whole* individual will realize that it is merely a part and should not be confused with the whole.

Facilitation and inhibition. You know from observation, experience, and by actual experiment that nerve impulses in certain situations and under certain conditions seem either to facilitate or inhibit each other. Thus numerous nerve impulses may come together for the end result of getting you to the bus you are running to catch. You will collide with a slow pedestrian who gets in your way, if the stimulus "obstruction" does not set up enough inhibiting nerve impulses to stop your forward progress.

Running for the bus was the response to a number of stimuli, no one of which taken alone would have been adequate to cause the response of running, but taken together each facilitated the other and together brought about the needed activity. When the pedestrian got in your way, a whole series of nerve impulses, set up in opposition to those which were causing you to run, changed your response. You stopped, perhaps apologized. If it happened to be a friend whose automobile was at the curb, you may not have resumed your running, but changed your response to entering the automobile. These examples suggest the constant facilitation and inhibition which are going on in the interplay of nerve impulses. So intricate is the organization of the neural system that it gives possibilities to every human being for an almost endless means of control.

The Receptors and Sensations

Contact with the environment is effected through receptors or sense organs. Through these avenues of impression we acquire sensory experiences essential to the development of control. What we see, hear, and so on, determines what we do. If we cannot see, the sensory world of light and color cannot influence our activity as it does that of the seeing. If we cannot hear, we cannot control or direct our movements by sounds. Because we are deaf we may fail to control our vocal organs to produce speech and song. Although by laborious redirection of energy we may learn to speak, the speech will differ from that of those who use sounds in controlling their behavior. These examples suggest the important rôle sensations have in developing control of activity.

The stimuli which activate the receptors may be physical, chemical, or electrical energy systems. These agents of stimulation have certain properties and follow laws which we must understand in order to know their significance for us as living organisms needing to control our relations with them. However, as students of psychology we are primarily concerned with the effects produced by these energy systems within the organism. We are not, for instance, studying light as the physicist does, but as a psychological reality of brightness and color. Other physical energies become tones and noises if we have the bodily mechanism to transmute them into sensory experience. At the gateway of this sensory world stand the receptors as determiners of what sensations we shall have to use in shaping our behavior.

Sensations. The receptors are specialized structures in the body formed to respond to particular stimuli. Thus, the eye responds to light waves and disregards other stimuli, the ear responds to sound stimuli and not to light. The stimulus which is of the right nature to activate the specific sensory neurons in the specialized sense organ is considered an *adequate stimulus.* Each specialized sensory neuron transmits its characteristic impulse to the central nervous system where it is transformed into the particular sensations which we class under the general divisions of vision, sound, smell, touch, heat or cold, pressure, pain, balance or tendon, joint and muscle tension, and organic sensations.

Wherever we find a specialized end organ containing sensory neurons responding to a particular type of stimuli, we can expect a characteristic sensation from the stimulation of that end organ. Thus far anatomists and neurologists have found specific end organs for more than twice as many senses as the Biblical five.

Threshold. Every stimulus must have a certain intensity or amount of energy to cause the sensory neuron to become active and transmit its characteristic impulse to the brain or spinal cord. If the stimulation is below a certain amount, no response occurs. This point is called the *threshold* or *limen.* This limen varies with different people and also for the same person in different situations or with different conditions of the body. Stimuli which under certain conditions would elicit a vigorous response, under other conditions will not stimulate the sense organs enough to bring the response into consciousness. This raising and lowering of the threshold is in some measure under control. True, certain fundamental functions are determined by structure and the sensitivity of the nervous mechanism, but beyond that the control which the individual exercises over the limens of his sense organs determines the type and quantity of the sensory experiences he may get from his environment.

The receptors and sensations initiated through them are presented briefly before considering each in greater detail. Warren and Carmichael (1930) have classified the various sensations into three groups according to the source of the stimulation. The external, arising from stimulation from objects outside the body; the systemic, from conditions within the body; the motor, from movements and bodily position which involve both the body and the outside world. The external senses have been subdivided into distant senses, which give knowledge of objects some distance from the body; and contiguous senses, concerned with objects in immediate contact with the body. The classification and supplementary data are given in the following table.

CLASSIFICATION OF THE SENSES [1]

Class	*Sense*	*Receptor*	*Kinds of Experience*
1. External (a) Distant	Sight	In eye	Colors and grays
	Hearing	In ear	Tones and noises
	Smell	In nostrils	Odors
(b) Contiguous	Taste	In tongue	Tastes
	Touch	In skin	Contact and pressure
	Warmth	In skin	Warmth
	Cold	In skin	Cold
2. Systemic	Organic	In internal organs	Hunger, fatigue, sex, etc.
	Pain	Free nerve endings	Pain
3. Motor	Kinesthetic (Muscle sense)	In muscles	Effort, strain, etc.
	Static	Semicircular canals, sacs	Position, rotation, etc.

Skin sensations. Within the skin are end organs which when stimulated give the sensation of touch, pressure, heat, cold, or pain. You can easily investigate these sensations by simple experiments described in psychology work books. The elementary cutaneous sensations probably combine to give us complex sensations which we perceive as hardness or softness, smoothness or roughness, and so on. Hardness may actually be a combination of sensations of clearly defined borders, equal pressures and coldness, while warmth may be a matter of indefinite borders, of unequal pressures and warmth. Thus we combine or synthesize elementary sensations into complex ones which we interpret as wholes carrying to us meanings that may have little to do with their diverse origins.

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[1] From Warren and Carmichael, p. 79.

Careful experiments are being made to discover the sensitivity of deaf persons to properties of sound indicated by vibrations. The delicate skin responses are now being used to supplement lip reading. Constant experimentation may soon develop serviceable mechanical aids which will help the hard-of-hearing as effectively as lenses can help those with defective vision.

Organic sensations. Sensations of touch, pressure, warmth, cold, and pain are no doubt aroused within the body in much the same manner as they are aroused in the skin. In addition, there are other sensations arising from various organs within the body which at present we designate as organic. Hunger appears to be the characteristic sensation initiated by the movements in the stomach. When these movements occur, sensory neurons are stimulated and hunger sensations are experienced. When these movements do not occur there is no hunger. Similarly, there seem to be neural arrangements in various organs which, when adequately stimulated, give rise to sensations of thirst, suffocation, sex, fatigue, and so on.

Kinesthetic sensations. Within the muscles, tendons, and joints are neural processes upon which we must depend for discrimination of movement and muscular tonus. The sensations arising from these sources are of utmost importance in maintaining bodily posture. These kinesthetic sensations also have an important place in the development and control of bodily skills and in the effectiveness with which we can perform such routine skills as walking, writing, and speaking.

Balance or static sensations. Closely allied with the kinesthetic sensations controlling bodily movements and the tonicity of skeletal muscles are the static sensations of balance or equilibrium arising from end organs situated in the semicircular canals. Under usual conditions these sensations cause muscular responses necessary to the maintenance of coördinations involved in equilibrium. The smoothness with which this labyrinthean stimulation proceeds apparently has some connection with ability to pilot air crafts. If this mechanism is impaired, however, it may be that kinesthetic and visual cues can be substituted to enable the individual to maintain balance in familiar situations.

Smell sensations. The sense of smell depends upon the stimulation of end organs in the mucous membrane of the nasal passages.

These end organs are stimulated by particles of volatile substances which can, either directly or through solution in the moisture of the nasal membranes, be brought into contact with the end organ. A wealth of information regarding our environment can be acquired through these sensations.

Most psychologists still refer to the work of Henning (1924) for classification of odors. He divided odors into six classes, or elementary odors, flowery, fruity, spicy, resinous, putrid or foul, smoky or burnt, illustrated in the smell prism, Fig. 1. Rarely, however, are any of these odors found in isolated form; most of the odors we experience are combinations of two or more of these elementary types of smell sensations. When one realizes the great number of combinations and blends possible for varying intensities of the six elementary odors, it is easy to see the difficulty of the problem. Couple this with the difficulty of isolating the end organs in the mucous membrane of the nostrils and one sees why investigators have added as yet little to Henning's careful analysis. His smell prism not only provides visual aid for the recall of the six elementary classes of odors but suggests possibilities of interplay of every odor with every other odor.

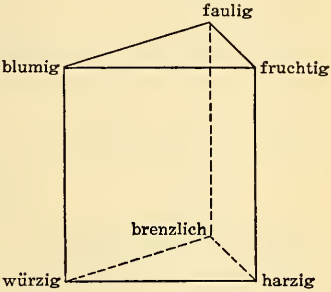


Fig. 1. Smell prism showing the six elementary odors, flowery (blumig), putrid (faulig), fruity (fruchtig), spicy (würzig), smoky (brenzlich), and resinous (harzig). From H. Henning, 1924, p. 369.

The importance of the sense of smell to animals is readily conceded but to man its importance is masked by more dominant sensations. Yet the sense of smell is controlling our behavior in many subtle ways. We choose food because it "smells good," open the window because the room "smells stuffy," buy soap because of its "clean" odor. The art of the perfumer flourishes quite as importantly among bathed as among unbathed peoples, and evolves modern perfumes quite as potent as the love charms of the primitives. Although Bogert (1933) has written from the chemist's point of view, he has made a number of cogent observations regarding the psychological importance of odors. In part he writes as follows:

Shrewd business men have already awakened to the powerful sales aid to be obtained from perfumes, and at last understand that an appeal to the nose is often more powerful than an appeal to the eye (p. 270).

Taste sensations. Within the tongue and cheeks are found taste buds or end organs for gustatory sensations. All sensations which are definitely classed as tastes can be grouped as sweet, acid or sour, saline or salty, and bitter. Some investigators find other qualities such as metallic, alkaline, vapid, insipid, and so on, but there is no general acceptance of these as primary or elementary qualities like the four upon which all seem to agree. Again we turn to Henning (1916) for graphic presentation of his taste tetrahedron, Fig. 2, in which he places a primary taste quality at each apex. In the second edition of his book, *Der Geruch*, Henning amplified the taste tetrahedron into a sphere with movable circumferences, as shown in Fig. 3, to indicate other qualities which are usual concomitants of the taste experience. On one circumference are located gradients of the four primary tastes, sour, bitter, sweet, and salt; on another, gradients of warm and cold; on another, dry and moist; and on another, bland and pungent. If each circumference is regarded as movable, it is easy to imagine the many possible combinations of qualities to produce complex tastes, and to realize the complexity of the psychological experience we call taste.

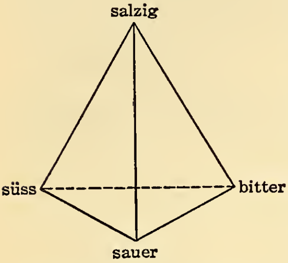


Fig. 2. Taste tetrahedron showing the four elementary qualities of taste, salty (salzig), sweet (süss), sour (sauer), and bitter. From H. Henning, 1916, p. 212.

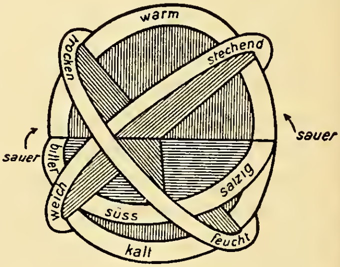


Fig. 3. Taste sphere showing the four elementary taste qualities and the additional concomitants of taste experience, dry (trocken), moist (feucht), warm, cold (kalt), bland (weich), pungent (stechend). From H. Henning, 1924, p. 274.

The food we eat usually stimulates smell and tactual receptors as well as taste receptors. The close relation between taste and smell can be demonstrated easily by closing the nostrils and attempting to identify various food substances which have been reduced to similar consistency to avoid revealing cues. Onions and apples may taste surprisingly alike. The visual sensations also influence our reactions toward food, as the clever cook well knows. As civilized people we "eat with our eyes" more than we realize. Sight, however, exerts a remote influence compared with the intimate interrelation of smell and touch in the taste of food.

Adaptation. A curious relation between stimulus and response observable in all sensory activities is particularly evident in taste and smell. This is the phenomenon of *adaptation*, wherein vividness of response decreases as stimulus is prolonged. In smell the first whiff is the most vivid. Continued stimulation very soon causes sensory neurons to cease conducting that particular sensation, and you become adapted to that specific smell. The threshold for that odor has been raised and you no longer attend to it.

Some investigators have found a similarity between fatigue and adaptation, but consciousness of fatigue accompanying muscular activity is lacking in adaptation. Recovery also is much more rapid in adaptation than in fatigue. Sensitivity to an odor can be brought back by a few breaths of fresh air, sensitivity to sweet by a drink of water or some sour substance. Then, too, the senses can be controlled by the individual through learned routine reactions, or by lowering or raising the threshold to enhance or ignore the sensation. Spinach is rejected because you have learned to dislike it; the sour lemon seems much more sour when you have lowered your threshold for sour sensations by expectation.

Contrast, fusion, and compensation. *Contrast* effects are evident for taste and smell as well as for other sensations. Sweet is sweeter after sour, flower odors seem more pleasantly flowery after the acrid smell of tar. Such successive contrast effects are a more common experience in both tastes and odors than are simultaneous contrasts. Stimuli for tastes or odors mix so readily that what is actually experienced is more often a *fusion* or *blend* of sensations. By attending carefully to a mixture of tastes or odors, you can easily single out the more intense components, but those with low intensities elude analysis. Bitterness is more readily recognized in fused tastes than any of the other primary qualities; just as certain pungent or acrid odors are more difficult to conceal by mixing. Sometimes the components in a fusion may seem to cancel or compensate each other. This *compensation* will reduce the effectiveness of stimuli and make sourness seem less sour when mixed with sweet, or sweetness seem less sweet when mixed with sour. Bitterness does not lend itself readily to compensation.

Auditory sensations. Sound waves as they stimulate the end organs of hearing, located in the organ of Corti in the inner ear, give rise to auditory sensations which have a large part in determining and controlling behavior. Hearing ranks next to sight as an avenue of communication between ourselves and our environment. It also has a highly organized sensory equipment and appears to have definite areas of localization in the cerebrum. The end organs of hearing are designed to respond to the impacts caused by the vibration of sound waves. The results of this excitation are transmitted by sensory nerves to the cerebrum where they may be perceived as the sensation of sound. Ordinarily vibration frequencies from 20 to 20,000 can be said to represent the audible sound heard by the normal person. Within this range there may be small bands of frequencies which are not heard. These so-called tonal gaps or tonal islands may be the reason you have difficulty in hearing some voices that make frequent use of the vibrations to which your ear cannot respond. A careful measurement of the auditory acuity of each ear is valuable to enable you to know how effectively you are using this important tool of control.

Sounds are roughly divided into *noises* and *tones*. Noises are various sounds more or less jumbled together without definite sustained rhythms or recurrent vibrations. Tones result from vibrations occurring in definite relation to each other and sustained in orderly progression. Sounds which in elementary form would be essentially tonal may in combination become antagonistic and conflicting so as to produce noise. Noise seems to the hearer less controlled than tones, less orderly and predictable, hence less pleasing. Tones seem more controlled in their orderly organization, therefore more pleasing to the hearer.

The ear does not become adapted to sounds as readily as do some sense organs to their adequate stimuli. True, one can learn to disregard many sounds, but the thresholds of hearing are constantly being raised and lowered by varying qualities and attributes of sounds heard. Noise is particularly irritating because of its unpredictable and unexpected character. The ear cannot adapt completely to sound, nor can the ears be closed as the eyes can. If it is necessary to shut out sound, it is essential to control the agent producing the noise or isolate the self by other mechanical means.

Reducing the noise and clatter of machines becomes increasingly important in modern life as machines increase in number.

Attributes of sound. Sounds have certain attributes which, because they are more clearly demonstrated by tones than by noises, will be discussed in this chapter principally as attributes of tones. They are the elementary aspects of sound known as pitch, loudness, duration, and extensity. *Pitch* is that attribute of a tone determined by the vibration frequency. If the vibrations are few the pitch is characterized as "low," if the vibrations are many the tone becomes "high." The *loudness* or intensity of a tone is determined by the energy of the stimulus objectified in the amplitude of the vibrations. The *duration* of a tone is its continuance in time. The *extensity* of a tone does not refer to actual extension in space, but rather to that fundamental characteristic of tone which makes us perceive it as having extent or size.

Combinations of these fundamental characteristics produce such complex aspects of sound as timbre, volume, consonance and dissonance, rhythm and melody. *Timbre* is the combination of tones of different pitches into one complex tone. This complex tone sounds richer than the tone based on a single vibration frequency or fundamental tone. The tone of a tuning fork is a simple one based on a single vibration system. The tone of the violin is much richer because combined with its simple vibration system are others which produce the overtones responsible for the richness. *Volume* is a complex aspect involving the attribute of extensity with others. Combining pitch and extensity we have the feeling that high tones are small, and low tones are large. This is quite apart from the intensity, since a high tone persists in seeming small no matter how loudly it is sounded, just as a low tone seems large although gently produced. The complex timbre may also be combined with extensity to produce the seeming bigness of a rich tone from a violoncello or the seeming smallness of the clearer tones of the flute. *Consonance* and *dissonance* are produced by two or more tones sounded simultaneously either fusing and blending, or interfering and clashing with one another. Pitch is the attribute most involved in consonance, although other attributes may act as contributing factors. *Rhythm* involves the attribute of time in association with one or more of the other primary aspects of sound. Melody involves all four attributes to produce the relatively pleasing sequence of tones that it is.

Music combines both the simple and complex characteristics of sound into patterned combinations and sequences more or less meaningful and pleasing to the hearer.

Voice and speech. Speech deals with a rather limited number of tones which are, or should be, musical. Comparatively few of us are endowed with beautiful singing voices, but most of us use our voices for speech. The way we speak is learned, therefore under our control, but how many of us know how our speaking voices really sound? We control, consciously or unconsciously, effectively or badly, the sounds we emit with the aid of our vocal cords, which activate the auditory nerves of our hearers and thus arouse in them corresponding auditory sensations. How we say it is often an element in the control of others quite as much as what we say.

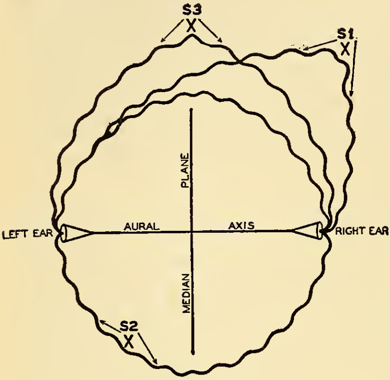


FIG. 4. Localization of sound. Sounds from stimuli S1 and S2 will reach each ear at different times and with different intensities. Sounds from stimulus S3 in the median plane will reach each ear at the same time with equal force.

The physical aspects of both noise and tones are known with a fair amount of definiteness and accuracy. Miller's *Science of Musical Sounds* is still the most quoted book, although written some twenty years ago. Seashore (1919) and his colleagues have gathered data for better knowledge of the psychology of music since the turn of the century. Other investigators have made more or less successful attempts to isolate and evaluate the various effects of noise or of music. The use of sounds through both speech and music is discussed in later chapters.

Localization of sound. We use sounds for hearing direction in auditory space. Because the two ears are located in opposite sides of the head, we are enabled to localize sounds and orient ourselves in relation to the physical source of the sound. Figure 4 presents localization of sound from stimuli in different planes. Sound from the right would activate the hearing apparatus of the right ear with more intensity, therefore we could, if both ears are of relatively equal sensitivity, locate the sound as coming from that direction.

Sounds are localized with considerable accuracy in any plane which permits the sound to stimulate the auditory nerve of each ear with unequal intensity or at slightly different time. In the median plane, however, sounds which may originate from the front, zenith, or back and stimulate both ears at the same time with equal intensity, are localized with much less accuracy, although with great assurance. We are able to estimate distance through intensity, although somewhat inadequately. For example, if the sound from an airplane motor flying relatively high strikes the ears with less intensity, the plane is judged to be far away; if the sound is louder, more intense, the plane is judged to be nearer or flying relatively low. However, it is seldom possible to estimate the exact distance in feet or miles.

Visual sensations. We depend greatly upon vision to know our environment. Highly specialized neurons in the rods and cones of the retina of the eye are sensitive to light stimuli and initiate neural energy which we experience as sensations of sight. Sounds and smells may come to us from around a corner, but unless aided by mechanical extensions which deflect light, we can see only that which is in the visual field before us. Because each eye receives light from a slightly different side of an object we see it as having depth or thickness as well as height and breadth. Because light from a moving object successively stimulates different parts of the retina, we are enabled to see it moving. The delicate muscular mechanism of the eye as a whole also plays its part in adding muscular cues to the sensations of light thus enabling us to have greater knowledge of the movement, size, and shape of seen objects than would be possible with one eye or with fixed eyes. People who have lost the sight of one eye report the necessity for readjustment to new cues and relationships in space perception of distance, movement, and so on. Two movable eyes converging upon an object make possible the stereoscopic type of vision most of us have. The stereopticon, so popular before the days of motion pictures, demonstrates this principle in simple and direct form.

Things are seen with greatest clarity in the central part of the field of vision. That is because the light rays from objects in the center of vision enter the eye through the pupils with more directness, hence possibly with greater intensity, and stimulate that part of the retinal field in direct line, which also contains the greatest number of sensitive neurons. As an object is observed the eyes are turned to get it into the center of the visual field in order to see it with maximum distinctness. This focusing of the eyes upon the object of regard is called *fixation.* It is a native ability which develops with maturation of the essential organs in response to the urge to use the eyes. Fixation, although under individual control, is largely routine activity.

With the exception of the small spot where the optic nerve begins, the retina is plentifully supplied with rods and cones. The fovea, where sight is clearest, contains a preponderance of cones. From the fovea outward in all directions, the number of cones diminishes and the rods increase, until in the periphery of the retinal field very few cones and many rods are found. The cones are believed to be sensitive to light waves which give rise to color sensations, while the rods respond to intensity. The gray rim around the visual field is due in part to this comparative lack of cones in the outer retinal field and partly to the indirectness and hence less intensity with which light falls upon it. The fact that stars of low magnitude may be seen in indirect vision and not when the eyes focus upon them also indicates that the rods respond to the intensity of light. Rods are plentiful in the periphery of the visual field where the stars can be seen.

By experimentation it has been found that in the normal eye the fovea of the retinal field is sensitive to all colors of the spectrum as well as brightness effects. Slightly farther out in the retinal field we find that sensitivity to green stimuli stops, then to red, then to blue, yellow, white, and gray respectively. The fields for green and red tend to be similar in area, also for blue and yellow. This may have direct bearing on any attempt to explain defects in color vision.

Color-blindness. Blindness to red and green colors is the most common form of partial color-blindness. Blue-yellow color blindness is more rare, usually resulting from some retinal disease. Total color blindness would mean that sensitivity to all color stimuli is lacking, but brightness sensitivity is not. Since the color-blind person builds his visual world entirely from brightness cues, he is at a loss if two colors are presented with the same brightness value. For example, a person suffering from red-green color-blindness is handicapped in driving a car because he is unable to differentiate traffic lights which use red and green of exactly the same brightness. A sharp differentiation between persons with normal vision and those with red-green color-blindness is difficult, because there are many degrees of color-blindness, particularly pertaining to reds and oranges.

Color-blindness of any degree, except that brought about by retinal disease, is considered hereditary. Data indicate that this characteristic is sex-linked. Some 4 per cent of the male, and less than one-half of 1 per cent of the female population are color-blind.

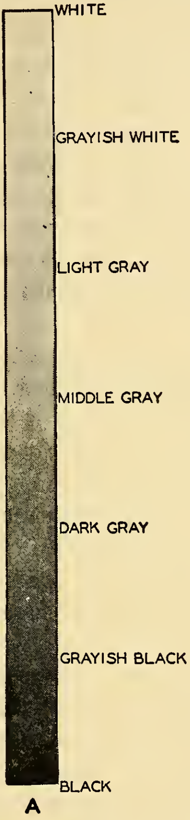
With the increased use of color, its discrimination becomes more important. Tools are being developed to aid the color-blind person to see colors, just as astigmatism or myopia are corrected with proper lenses. A device made by Ross (1936) employs color filters affixed to the windshield of a car in such a way that the positions of red and green lights do not become accidentally interchanged. A color-blind person should know his handicap and should avoid situations where it makes a vital difference whether or not he reads his brightness cues as accurately as others read colors. Testing for color sensitivity (chromatic vision) should be as much a routine procedure as testing for brightness sensitivity (achromatic vision). There are several well-standardized and simple tests available to find the common forms of color blindness. The Holmgren wools consist of three large skeins of wool in primary colors and 125 smaller skeins of different colors. The subject matches the small skeins to each of the large ones. The Ishihara test consists of a booklet with varicolored dots arranged on each page in such a way that the color-blind person sees a different pattern from that seen by the person with normal chromatic vision.

Qualities of visual sensations. Vision, like other special senses, has its characteristic attributes. Of these the qualities of visual sensations which we call colors and grays have occupied the attention of investigators more than any other. One group of color experiences involves the series of grays ranging from black to white, which we call the achromatic series. Another group consists of the chromatic series or the pure color sensations made familiar to us by the spectrum. A third group of sensations combines in various ways the grays and the color effects, which we commonly think of as the purity of the color.

Various descriptive terms have been applied to color experiences, but all may be located in one of the following three classes of characteristics. *Brightness* is that quality of a color which makes it equivalent, except in hue, to some intermediate gray on the brightness dimension ranging from white to black. Approximately 700 grays are distinguishable under optimum conditions, but we probably distinguish many less in common usage. This quality is also designated as brilliance, luminosity, or value. *Hue* is that quality of color which indicates its characteristic difference from gray as tending to appear red, yellow, green, blue, or the like. Investigators differ in their estimation of the number of hues distinguishable under optimum conditions. L. A. Jones a score of years ago found some 128 hues. Hecht (1934) found that "the normal human eye can separate the visible spectrum with complete certainty into about 180 patches which at moderate brightness cannot be made to look like one another merely by adjusting their intensity differences" (p. 788). Others give estimates between these extremes. *Saturation* is that characteristic of color which determines its difference from a gray of the same brilliance. For instance, we can mix gray and red of the same brightness on a color wheel so that the circumference of the disk will appear pure red, and passing toward the center the color will appear less and less red until the unsaturated gray is reached at the center. Gray is completely unsaturated. Completely saturated colors have no gray. Purity and chroma are terms used by some writers as synonymous with saturation.

If you can imagine all the different grays from black to white combined with all the different hues in all possible degrees of saturation, you will have some conception of the great importance of visual data in your sensory world. Estimates vary, but some 30,000 qualities of vision distinguishable to the human eye seems a reasonable estimate. Although conditions may make only a portion of this great array available at any one time, it is not surprising that man uses vision more than any other sense in directing and controlling behavior.

Various attempts have been made to represent the various qualities of vision in graphic form. Let us build our own figure in imagination with the help of two conventionalized figures, A and B in Fig. 5, to suggest the data to be incorporated. The first, A, represents the brightness dimensions from white to black. The second, B, represents the four psychologically primary hues, with several intermediates, arranged in a closed series on the circumference of the disk. The saturation decreases as it approaches the unsaturated gray of the axis. The disk can be imagined as made up of all possible hues. The psychologically primary hues are those essential to describe all colors introspectively as reddish, yellowish, greenish, or bluish, although they may be distinct sensations of any one of the considerably more than a hundred hues. The disk is irregular to represent the variation in saturation for the various hues. Imagine such a disk for each possible brightness value from black through all the grays to white. As the white or black end of the series is approached, the disks may become smaller, since the saturation point will come nearer to the unsaturated gray until the black or white point is reached. If you have imagined well, you have a mental picture of the qualities of color incorporated in, brightness, hue, and saturation.



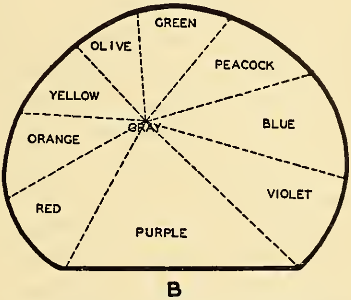


FIG. 5. A, Black-gray-white series, and B, color discs to be used in constructing imaginary color cones. Adapted from Warren and Carmichael, 1930, pp. 92 and 392.

Modes of appearance. Investigators are finding that the classification of colors in terms of brilliance, hue, and saturation does not include all aspects of the color experience. Other aspects presented under special conditions have been designated by Katz (1935) and others as "modes of appearance." Troland (1934) cites a few of the aspects. *Surface colors* are primarily dealt with in daily experience with the superficies of visual things. These colors are usual where the visual field shows a complex pattern of visual things. If the field is dark or blank, an isolated color may take the form of a *film,* which is a commonly experienced spectroscopic phenomenon. *Bulk* or volume in color is frequently presented by glass or other transparent objects. *Glow* is a peculiar aspect presented by self-luminous objects. *Luster* is an attribute manifested by metallic and other reflecting surfaces.

Visual stimuli. The color depends upon the wave length presented by the stimulus. Two wave lengths presented to the eye simultaneously may produce an effect like that of a third wave length not presented from the original source. You are all familiar with mixed pigments of paint. Any source of colored light can be used to present the same effect in the eye. Colored papers rotated on a disk or colored lights effectively manipulated can produce the same effects. The retina cannot release the effect of stimulation the instant the stimulus is removed. Therefore, if a second color is presented, the cones are still responding to the first color and the two in effect mix to produce another color or to cancel each other to gray or white. Complementary colors such as dull red and bluish green or blue and yellow do this. Others like red and yellow mix to produce orange, red and blue to make purple, and so on. Mix any color at the right of the spectrum with any color at the left and the neutralizing effect is seen by the production of gray. Mixing any color with light grays to white gives a *tint,* with dark grays to black gives a *shade.*

The apparent color of an object varies with the constituency of the light falling upon it. Colors seen in white daylight are often quite different under electric light or candlelight. An evening dress which has a becoming color in daytime may be drab and uninteresting under artificial light. Likewise, colors matched under artificial light may not match in daylight. By controlling the constituent wave lengths of the source of light, almost any color effect can be produced.

The intensity of the illumination also affects the type of resulting sensation. If you are fortunate enough to walk in a garden with many flowers of varying colors in bloom, as evening approaches, note how first one color, then another, will fade and disappear as night comes. Finally, all color has faded, but the eye has adapted to the diminishing light and objects are still clearly visible. Twilight vision, or the Purkinje phenomenon, demonstrates the theory that rods are the functional organs for adaptation to dark, while the cones are the functional organs for colors.

Colors at a distance are less distinct, less vivid, less easily seen. Since the intensity of light decreases with greater distance, both clearness and color appear to decrease as objects go farther and farther away from the beholder.

Contrast effects are constantly demonstrated in the world about us. White on black looks whiter than white on gray, green on red looks greener than green on blue, to cite only a few examples. The dress may be unbecoming because it emphasizes the wrong colors in your skin or cancels those which would make it look rosy and clear. You may look drab and uninteresting because your tie fails to accent the color needed to emphasize your better points. Then too, white objects look larger than black objects of exactly the same size. This depends upon the tendency for white to radiate or reflect light and for black not to radiate but to absorb light. Even though you know two objects to be the same size, the white one will appear larger.

After-images. The flash of lightning is seen for some moments afterward; the spots of light like small suns dance before our eyes long after we have looked at the glowing sun. Fixate a red disk for a number of seconds. Then glance quickly at a gray or neutral surface and note what you see. If you have fixated the red disk long enough, you will see a disk as an after-image definitely tinged with green. How does this greenish disk compare with the red disk in size? Has it any other characteristics? Try the same experiment with other colored disks. Sometimes the after-image will be the complementary color of the one you were looking at, sometimes it will be dark if you have fixated a bright object, or light if you have fixated a dark object. These are all designated as *negative* after-images. Occasionally the image will be the same brightness as the original, although it may vary in shape or size. We speak of this as a *positive* after-image. An example of this positive after-image can easily be found by fixating the filaments of an unfrosted electric light bulb, then close your eyes. The positive after-image will appear as a bright reproduction of the original. The receptors for light fatigue rapidly, therefore after-images are always to a greater or less degree a part of our visual experience. In our routine use of vision we tend to ignore them or to accept them as part of the experience.

Perception

From the discussion thus far, you have no doubt gathered that the effectiveness of any sensory experience depends upon what happens in the mind of the individual as a result of the stimulation. We look at a certain object and see it as a globular, rather small, slightly rough and shiny object lying on a plate before us. We cut it and immediately our olfactory sense tells us it has a fruity, slightly pungent odor; we taste its golden juice and sweet and sour taste buds send their characteristic messages to the brain. Long before this, however, we have recognized an orange. We have in the past given meaning to each separate experience and therefore "know" the fruit so named. This giving *meaning* to sensory experience is a process of perception. If this interpretation of stimuli does not take place, they merely arouse sensations which may not thrust themselves into consciousness. When we do interpret a sensation as something, or like something, we are perceiving and forming percepts which we use constantly. Developing powers of perception, and increasing the number of percepts formed from stimuli activating sensory neurons enriches our knowledge of the world about us. Through this greater knowledge we can direct our energies more wisely toward the control necessary in successful adjustment to environmental conditions.

Constant integration and association of elements of sensory experience are going on as we use our powers of perception to know more about ourselves and our environment. Since through perception we gather the raw material with which we learn, think, remember, imagine, and create, it is obviously essential that we perceive with precision, accuracy, clearness, and as extensively as possible. Although we differ greatly in perceptual abilities almost all of us can improve and extend considerably our perceptual powers. The important rôle of perception is further emphasized by more detailed discussion in Chapter VIII.

Sensation and Routine Behavior

Sensations not only determine in large measure how we shall act, but they also shape the patterns of our mental life. They play a dynamic rôle in forming routine as well as other behavior, and do not lose their importance when blended and integrated into patterns of behavior where they become obscure.

It would seem that we have come far afield from the problem of establishment of routine behavior, but we have actually been examining some of the parts which constitute the whole. As the individual matures, his sensory experiences are transmuted into patterns of behavior which tend to become routine. Activity loses its general and uncoördinated form to become particular activity directed toward some specific result. Reaction patterns, which in themselves tend to become simpler and more direct as they develop, become better integrated into more complex behavior. Those which can be delegated to the lower brain centers to become automatic or routine are in the economy of nature so delegated. Reflexes can be trusted to care for many motor patterns of reaction set by the nature of the individual. The plastic organization of the nervous system can be depended upon to adapt the experiential data supplied by the senses to the adjustment of the individual to his environment, and to retain a certain part of that adaptation in more or less permanent patterns known to us as habits.

Questions for Yourself:

1. Upon which special sense do you depend most? Which do you neglect?
2. Do you find your knowledge of the nervous system an adequate background for your study of psychology? If not, what steps will you take to remedy the deficiency?
3. What kind of world of color do you live in? How can you enrich your experience by training your perception of color?
4. How well and accurately do you listen? When you ask a question, do you usually hear *and* perceive the reply?

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CHAPTER IV

CONTROL THROUGH HABITS

Activity, as we well know, does not long remain merely random movement. Very soon after birth reflex movements are combined with controlled acts into patterns of behavior designed to adjust the individual to his environment. When once a desired result has been achieved, the pattern of activity is readily repeated whenever essential stimuli or cues are presented even in situations only remotely, if at all, similar to those in which the pattern was formed. This tendency to react in the same manner results in the acquisition of learned patterns of behavior which have long been called *habits*. The more descriptive terminology of the adjective *habitual* and the adverb *habitually*, as modifiers of the noun or verb stating the activity, is preferred by some to imply a dynamic situation more in keeping with the conception of man going in a prescribed previously traveled way. Others avoid using the term "habit" because it may designate a pattern in which some elements are unlearned and purely reflex; just as they avoid using the term "instinct" because learned elements may be a part of the activity. However, if habit is interpreted to mean activity which is predominantly learned and is repeated in approximately the same pattern it had on previous occasions, the term and its derivatives may well prove useful in our vocabularies.

The Economy of Habits

As we have seen, activities are combined and integrated into ways of behaving which tend to happen in routine and stereotyped ways whenever some element or cue in the situation calls them forth. The right cue will produce the habitual response without conscious effort or activity. If we wish to tell someone about an incident, we can put our entire thought upon the story and disregard the way we speak because a whole series of acts has been learned and combined into a smooth progression to produce speech. The language used, the order of words and phrases have been formed into habits of speech learned long before. Many separate acts are combined to make the habitual pattern of behavior, in which each intermediate act serves as stimulus for the succeeding act until the final goal is reached. When the habit is well established these stimulus acts require less energy in their production, therefore a distinct biological economy is accomplished in the expenditure of energy.

When we learn to play the piano, we are at first painfully attentive to each note, each movement, but finally through practice we weave many essential acts into a smooth sequence. It is not until we have relegated technique to habit that we can play with real artistry. So, too, in driving an automobile we cannot become good drivers until we have provided ourselves with a set of efficient and smoothly functioning driving habits. Those habits based upon reflexes will function first in an emergency. The extensor reflex has operated to extend the legs long before we learn to drive a car, therefore must be expected to act readily when there is no time to think what to do. Many automobile accidents occur because the accelerator and not the brake is pressed down in a crisis. In such cases the extensor reflex operates more readily than the learned activity pattern of first lifting the foot from the floor to the brake pedal and then extending the leg. The safe driver has incorporated right habits so thoroughly into his driving behavior that reflex acts are controlled or inhibited and habitual activity proceeds.

Other examples readily come to mind to emphasize how habits are often economical of thought and energy. The daily round of duties connected with bodily care, dressing, going to meals, going to work, are performed with little thought or effort. Habits are combined and become systems of beliefs and attitudes or develop into traits and tendencies. They are ways of responding which either aid us in adjusting to our environment or interfere with that adjustment.

The kinds of habits are legion, occurring as they do in every activity where learning takes place. Attempts to classify them have been made, but no one classification is both comprehensive and satisfactory. We refer to habits of stupidity, habits of resistance to temptation, habits of honesty, habits of speech, of intellectual dependence or independence, of walking, of thinking, and hundreds of other activities. Many habits involve the social situation and may be classified conveniently as *social habits.*

Wheeler (1929) gives this as the first division in his classification of habits. It includes customs, fashions, folkways, morals, and so on, which become group standards. Individual habits of carelessness, thrift, honesty, courtesy, radicalism, crudeness, and many others are also regarded as social habits. *Intellectual habits* constitute Wheeler's second division. The farmer, the artist, and the biologist have mental habits which make them view the same object differently. *Emotional habits* of grouchiness, suspicion, self-consciousness, cheerfulness, optimism, and so on, constitute another class. *"Nervous" habits* comprise the fourth class. Twitches, "er's" and "ah's" in speech, thumb-sucking, blushing, floor pacing are common examples. *"Physiological" habits,* which involve specific organic changes, include drug addiction, drinking of alcoholic liquors, smoking, and other indulgences. *Motor habits* involve muscular coördination and include the wide variety of skills such as those involved in walking, skating, playing a musical instrument, and so on. This is Wheeler's sixth and last group (pp. 70–72).

You can readily see that habitual behavior may include both desirable and undesirable habits regarded from the point of view of economy or usefulness to the individual and his group.

Right habits. Since much of our behavior is habitual, right habits which will function with precision to facilitate adjustment are essential. This rightness is not a fixed system of behavior but a relative matter dependent upon ourselves and the varied conditions in our environment. However, there are certain fundamental concomitants which tend to make some habits right and others wrong. Some of these are discussed in this book, others we may need to discover for ourselves. In general, right habits cater to our needs, desires, and wants in ways which are not only satisfying to us as individuals but are socially acceptable and help us to adjust comfortably and easily to other persons. Right social habits give us assurance that we can get through any situation without embarrassment; right work habits not only increase the amount of work we can do, but also increase the ease and pleasure with which we work; right emotional habits give poise and serenity; right mental habits help us to think clearly and effectively.

On the other hand, wrong habits interfere with or prevent those adjustments which are facilitated by right habits. Wrong habits may cater to shortsighted and socially unacceptable needs, desires, or wants, and, unfortunately, function with the same smoothness and economy of thought and effort as do right habits. The conflicts and difficulties brought about by wrong habits more than cancel any benefits derived from economy of effort in use or by temporary satisfaction of a want or desire. Rightness or wrongness of a habit is more than a matter of personal feeling. Wrong habits may feel more right than more acceptable substitutes, therefore personal opinion alone is not a safe criterion to use in judging the rightness or wrongness of habits.

William James (1890) in his classic chapter on "Habit" stresses the importance of right habits when he writes of "the hell we make for ourselves in this world by habitually fashioning our characters in the wrong way." He also emphasizes the responsibility given each of us by a plastic nervous organization "to make our nervous systems our ally instead of our enemy. . . . We must make automatic and habitual, as early as possible, as many useful actions as we can, and guard against the growing into ways that are likely to be disadvantageous to us, as we should guard against the plague."

Habits of control. Thus we see that we may not always follow our impulses with impunity. Even the innate urges must be controlled and directed into acceptable patterns of behavior. Habits of control are as essential in our equipment as any other skill we may learn. The tendency to control our activities may be thought of as a natural accompaniment to the inborn urge to use the parts of our bodies. Just as the urge to use an organ may not go beyond the development of a few aimless movements, so too the tendency to control the activities of that organ may be too feeble to survive. The habits of control may be developed quite as are the habits of use. If habits of control do not develop with habits of use, the individual behaves like an impulsive automaton. Many habits display this machine-like quality, and in the absence of adequate habits of control may operate to our detriment. Fortunately most of us manage to avoid a preponderance of detrimental habits, and are able to develop habitual behavior so that it is stabilizing and worth while.

Habits as conservative agents. James (1890) emphasizes the stabilizing influence of habit when he characterizes it as "the enormous fly-wheel of society, its most precious conservative agent" which keeps us all "within the bounds of ordinance." This stabilization proves advantageous when habits increase personal and group well-being, but it becomes detrimental when habits are antisocial and stultifying.

Self-control and direction indicate that extreme rigidity of habit is neither compulsory nor unavoidable. However, it does exist and must be recognized in our own behavior and in that of others. Valuable as habits can be made, we need to take into account the fact that as soon as a habit is developed progress along that particular line stops. Considerable conscious effort or strong counteractivity is required to change or inhibit the habit. The habit represents economy of conscious effort on the part of the individual, it is true, but economy gained at the cost of flexibility, adaptability, and often effectiveness. A habit-bound individual finds it increasingly difficult to adapt to changes in environment as his habits dominate both his physical and mental activities. Hence, the advisability of maintaining habits of self-control that will facilitate change in habits as necessity arises in meeting new situations and conditions.

Being habit-bound is not a matter of chronological age. Youth resents diversions from the customary path more than do older persons who have learned the lesson of control of self to a greater extent. Witness the pain it gives the average adolescent to be unlike his fellows in dress, in physical skills, and in other manifestations of the *mores* of his set. Or note how tenaciously a child insists on routine that has been established.

It is impossible to establish enough habits to meet all situations, therefore we are apt to permit habits already formed to dominate a given situation, regardless of their appropriateness or efficacy. The child who has learned to get his way by means of a tantrum uses that habit in many situations, whether or not any of the original stimuli which initiated the processes necessary to the formation of the habit are present. He has found it an effective method of controlling others and uses it whenever he finds it necessary. As the child grows older he may find it advisable to change the form of his response somewhat, but the activity retains the pattern of the childish habit in a marked degree. The girl who weeps prettily or stormily to get results, the man who swears and "blows up" are displaying adult adaptations of the childish tantrum habit. It is not difficult to discover other childish habits that persist in the behavior of adults.

Satisfaction of the need for food is quickly associated in infancy with oral activity. A full stomach gives rise to feelings of security and comfort, but the infant does not recognize the rôle of food in the production of this assurance. He associates satisfaction with oral and associated activities, and tries to secure satisfaction through repetition of the activity patterns. These patterns become habitual and may be repeated, often in disguised form, whenever the need for assurance arises. The infant reactions to the feeding bottle may persist into adulthood or then be revived with only the contents of the bottle changed. The holding-something-in-the-mouth behavior pattern, developed from sucking movements associated first with the nipple and actual satisfactions of food-getting, and later with pacifier or thumb, can be readily recognized in the activities of the persistent pencil chewer and the habitual cigarette, cigar, or pipe smoker. The persistent gum and tobacco chewer shows a slightly different version of this same behavior pattern, and also demonstrates the tenacity with which childish habits may cling or how easily they may be revived in whole or in part to shape behavior in adult life.

Many examples can be found in literature and life to illustrate the persistence of habitual patterns of behavior. The Mojave Indian returns to the hogan of his people after years spent in the white man's schools. The bootblack dreams and labors for the day he can return to his native Sicily and live as he did when a child. The people reared in the slums reproduce slum conditions if left to themselves even when transplanted to the most beautiful spot in the world. But you can probably find better examples from your own knowledge or experience.

Carry your investigations into mental habits and you will find many beliefs strongly colored or shaped by habits of thought set in early years. Try to find traces of some childish belief in your present mental activity. Your most obvious and fruitful field will be your superstitions. When did you first begin to believe that thirteen was an unlucky number, that Friday was a bad day to start new work, that black cats crossing your path foretold misfortune? Can you find any really authentic and logical proof that such superstitions should be believed? Your arguments may sound plausible to you, but will they to others without your particular mental bias? However, superstitions and their authenticity are not our particular problem here as much as the realization of the extent to which habits determine our mental activity.

The extent to which we relegate mental activity to habitual forms of thinking regulates the amount of control exercised over behavior. We can be alert, dynamic thinkers creating new ideas and understanding from the experiential data at hand, or we can relegate our thinking to habit and be mechanical reproducers of old beliefs that may not fit the new situation in the least. Yet we may believe our routine thoughts to be quite adequate because, being habits, they *feel* right to us and therefore we assume them to *be* right.

How Habits Are Formed

Habits are sometimes set quickly when a sufficiently strong feeling or emotion is present. But, for the most part, habits do not happen in a dramatic manner, but develop over a period of time. Habits are learned ways of behavior, therefore the laws of learning discussed in the following chapter apply in habit making.

In habit formation useless or irrelevant movements are not always eliminated. Analysis of almost any habit pattern will show many activities which have no real bearing on gaining the final result. However, in the process of learning these extraneous movements have played some rôle in dissipating energy and were retained as part of the habit pattern. Just why some cues are retained as adequate stimuli while others of apparently equal value are disregarded is a problem still in process of solution.

The conditioned response. By changing the relation between stimulus and response we cause the response to be conditioned. This is another way of saying we have changed the pattern of a habit, or have developed a new form of habitual behavior in response to new elements or a different relationship between the elements in the situation. Some psychologists use the term *conditioned response* instead of *habit* as being more accurately descriptive. Others use the term *associative shifting* to indicate that a new relationship has been formed between the elements in the pattern of behavior.

The most dramatic illustration of experimental work which demonstrates the conditioned response is that with dogs by Ivan Pavlov, the great Russian physiologist. He has shown how even a reflex act, commonly regarded as a relatively fixed form of behavior, can be changed or conditioned by elements in the environment. The flow of saliva usually occurs as a reflex response to the sight or odor of food, particularly during hunger. However, if a foreign stimulus is presented with sufficient intensity to force itself upon the sensory receptors simultaneously with the biologically adequate stimulus, it may supplant the original biologically adequate stimulus and provoke the response directly, even when the previously adequate stimulus is not present. In one experiment, the food was accompanied by the ringing of a bell, to which the dog is also by nature equipped to give sensory response. After a certain number of simultaneous presentations of both stimuli, the flow of saliva increased at the ringing of the bell, without the presentation of food. In other words, the glands and neurons of Pavlov's dogs had learned to respond to a different stimulus from the one which would naturally provoke the response. An inadequate stimulus has been made adequate, or a different response has been associated with a stimulus ordinarily powerless to provoke it. In short, the dogs have been conditioned to respond with a changed behavior pattern.

In the conditioned reflex the substitute stimulus had to have sufficient strength to force the subject to make sensory response to it. It may have been on the lower levels of neural reaction but it was none the less effective.

Children are easily conditioned by various environmental stimuli, particularly by those which stimulate the receptors so vigorously as to cause fear or some other emotional reaction. Brilliant flashes of light, loud clanging sounds, sudden loss of support are stimuli which usually startle or cause fear reactions. How these may condition the behavior of a child is shown in the following example. A two-year-old child is normally interested in a small animal introduced into his play pen. It reaches for it and grasps it readily. But strike a steel bar to produce a startling sound each time he reaches for the animal and very soon the withdrawing fear reaction will come at the sight of the animal alone. He has been conditioned to fear the animal. If the animal was covered with fur, this fear may easily transfer to other furry objects. This illustrates how readily fear habits may be learned.

The individual tends to relegate many bodily skills to routine behavior more or less conditioned by the environment. Micturition and defecation, originally reflex activities initiated by pressures or conditions within the body, are gradually conditioned through training by parent or nurse to control by the child. The child first became conditioned to vessel or chair and later to specific places and conditions of privacy. Elimination of other bodily excretions have become conditioned to environmental stimuli in much the same manner. Sleep, originally a response to bodily conditions, may have become dependent upon certain environmental factors, such as the bed, light, noise, presence of certain persons or of a favorite toy or blanket.

We all experience hunger, but the manner of appeasing that hunger varies with the environment in which we live and in which the specific eating process is done. Routine activities, bathing, dressing, shaving, are more or less automatic and are performed without particular conscious or attentive effort. Some of the original stimuli needed to initiate the reactions are still adequate, but others have been replaced by new stimuli which in the process of conditioning or learning have become adequate. Careful examination of our habits will show that they are made up of a large proportion of conditioned responses. Even many of our mental habits, and certainly our emotional habits, have a biological aura and easily can be regarded as conditioned responses.

Summary of steps in establishing a habit. Briefly, if you, as a thinking person more or less able to do as you "make up your mind to do," wish to establish some form of routine or habitual behavior, how would you go about it? At this point it would be interesting to trace the genesis and development of some relatively simple habit or skill made up of a hierarchy of habits. In this analysis you will probably note the important part played by the end result. If you have a *clear idea or image* of the control you wish to exercise, you know better the avenues through which you must direct your energies in order to gain that control. It does not matter whether you call this end result a smooth arpeggio on the piano or eating an oyster, you are none the less controlling yourself and factors in your environment to gain the specified end. To be sure, many habits are formed without this clear idea of the goal, but intentional habituation is greatly facilitated by such knowledge.

The next step is *analysis* of the various activities involved in gaining the desired end in order to select for practice and integration those activities which seem most effective. It is in this selection that your perspicacity is most evident in the type of activities you deem effective, also in the number and kinds of extraneous activities you permit as elements in your habit pattern. Analysis should neither be regarded as an end in itself, nor be permitted to interfere with progress in practice. It should be used intelligently to discover guiding points in plotting the distribution of energy, so that effort is not only exerted but directed and controlled. Analysis to discover the most effective means whereby the goal can be reached is usually essential for economical practice.

Repetition of the effective sequence of acts until the whole pattern functions smoothly and habitually is a useful habit-forming method, especially when consciously and deliberately used. When controlled and directed, repetition may aid in learning the sequential activities, or it may have a negative effect when deliberately used to break down an habitual pattern of behavior. However, repetition more often tends to have a positive practice effect in forming a habit, although the repeated act may not be exactly like the one copied. If the activity can be vividly dramatized or associated with an emotional situation, repetition may not need to be used, or used only to supplement the emotional element. Many of our habits are "set" in a single vivid emotional situation. The habit will persist even though the emotional setting is never repeated. Our likes and dislikes often can be explained by such an habitual thought set.

This, then, is a simple analysis of the way a habit is formed when you know the goal and have self-control to direct your activities toward that end, but it does not, of course, take into account the reasons why an habitual activity is important in your adjustment. Native and learned tendencies, drives, needs, motives, or desires function in the formation of a habit quite as in other learning. If known and understood, they may explain behavior by their causal relation to it. Although simple habits may have a stimulus value and thus initiate other acts, in general habitual acts do not cause stereotyped behavior, they *are* that behavior.

Since we are "creatures of habit," it is to be expected that conflicts may at times arise among our habits. The same situation may contain stimuli which excite two or more ratios of sensory activity which in turn arouse several habitual tendencies to act. In this case, several lines of reaction are possible: (1) the conflicting habits may cancel each other without evident overt activity, (2) the stronger habit may lead and cancel or weaken the other, (3) some outside condition may facilitate or reënforce one habitual reaction at the expense of the other, (4) the conflict may arouse an entirely different habit, (5) or a new action may result from conscious control and direction on the part of the individual.

As suggested previously, possession of a habit is no assurance that it is effective or "right" behavior, although it might be either or both. It may, on the other hand, be neither. It may be the most economical way from the point of view of expenditure of effort on the part of the individual and still be "wrong" behavior from the point of view of the higher mental processes, or of that of "good" for the individual or his group. It may be uneconomical behavior as far as expenditure of energy is concerned and yet "feel" right although the end result may be ineffective and even detrimental to the individual or to group welfare. The habit may even fail entirely to produce the end result intended by the individual, but may persist because of his lack of insight, understanding, or self-control, which may prevent changing or discarding the ineffective or wrong habit.

How to Transform Habitual Behavior

As will be recalled, the nervous system not only manifests a plasticity of organization which permits change, but a rigidity which resists change. Therefore, habitual patterns of behavior may become so persistent that it is very difficult, if not impossible, to discard or change them. Determining not to do something that is habitual is not enough, we must do something else in its place. If this is the old habit transformed and stripped of its undesirable elements the substitution is more quickly and easily accomplished than when an entirely new and unrelated habit is substituted. Habits are more easily transformed than destroyed. Sometimes, when we are trying to "break" a habit, we may direct our efforts so much toward the old habit that it is retained. The old habit may be serving as a means of getting attention and therefore will be persisted in as long as it serves this purpose. A "do" is more effective than a "don't," especially when the organism is ready for some activity. The energy which would have been dissipated in the wrong activity will be directed to the right one which we are attempting to substitute. The new habit is formed, then, by repetition, satisfaction, or to avoid punishment, or by a combination of methods.

Suppose you have been able to survey some of your habits in an impersonal manner and have found that you wish to change or to replace one by a more effective habit. You stutter, you get hoarse after speaking but a short time, you cannot sing more than a song or two without breaking, you get weary while playing the piano, or any one of dozens of activities. These are habitual ways of using your body which take more energy than normal or produce a much less effective result than anticipated or desired. This wrong use of the self is an aggregate of habits, many of which are in themselves wrong or only feebly right, or by combination cancel any intrinsic rightness the individual habits may have.

Many investigators have attempted to find solutions to the problem of correcting the wrong use of self which so frequently has been recognized in ineffective habits. F. Matthias Alexander of London has studied the use of the self and has presented a technique whereby the individual by a conscious use of his native tendency to control can break through his stultifying habits and remake them to his better use.

The energies necessary to make changes in the habitual use of self must come from the individual himself. The vigor of these energies and the control the individual is able to exercise in directing these energies toward the end desired, determine to a large extent the efficacy of his efforts. The clearness with which he can analyze his problem and understand the means at hand for its solution also plays a part in how effectively the individual can remake his habits. Others can help, outside factors can be brought to bear upon the matter, but the work of changing a habit and acquiring a new one is, in the last analysis, the affair of the individual. He may depend entirely upon another to tell him what to do and how to do it, but the doing itself is his responsibility.

Changing an habitual use of self. The first essential step Alexander (1932) emphasizes is the *recognition* that the problem in some way involves a wrong use of self. The second step concerned with this wrong use of self is a painstaking and comprehensive *analysis* of every element of the total activity and any accompanying activities which may have even a remote influence. The third essential is the *selection* of the activities to be changed; and fourth, the *application* of the remedial measures chosen as best adapted.

Then finally, these remedial measures are brought under *control* so thoroughly that you can use or not use them as you see fit, thus assuring a better *use* of the self. This is a free summing up of the essential phases of the Alexander technique. Let us examine each phase more in detail and whenever feasible go directly to the source book for the original presentation of material.

Alexander had made himself an accomplished reciter of Shakespearean rôles, but found himself at times unable to present a complete evening recital without hoarseness. His physician failed to suggest the treatment which would produce a cure for the trouble. Therefore Alexander was forced to look to himself for aid. He examined his problem and realized that in producing this throat condition he must be using his physical and mental equipment in a wrong manner when reciting, since under ordinary conditions when he was not reciting his throat did not get inflamed. His problem then became the specific one of finding out what activities he made use of when reciting that he did not use in ordinary speech, since such activities were no doubt responsible for his difficulty. The next step then became a thorough examination of his acts, postures, and so on, under both situations. A mirror was used in this self-analysis. He discovered that he showed three tendencies to activity in reciting which either were not present in ordinary speaking, or were present only in a slight and hence ineffective degree. These tendencies to pull back the head, depress the larynx, and suck in breath, were obviously a misuse of the parts concerned if they brought about the strain on the voice.

Thus having selected the elements which were in direct need of change, the next problem was how to bring about a change in these offending elements. Patient and persistent experimenting before the mirror showed that if pulling back of the head could be prevented, the other two difficulties were not evident. Thus, if he could control the head, the voice difficulty could be prevented.

But further examination showed that the wrong use of the head was dependent not upon the misuse of the specific part alone but was influenced by the use of the whole torso and legs. There was least tendency to hoarseness when the torso was lengthened. It was found this could be done best by pulling the head forward and upward. However, when he attempted to recite, the old tendencies to lift the chest, and so on, increased. Therefore it was necessary to find a way to put the head forward and up and at the same time prevent a lifting of the chest by arching the spine. The mirror was again brought into play, since Alexander could not dispense with it as he thought. He found that when he attempted to maintain the favorable position of head and torso while reciting, he was not doing what he thought he was doing. In part, as he states it, "I was indeed suffering from a delusion that is practically universal, the delusion that because we are able to do what we 'will to do' in acts that are habitual and involve familiar sensory experiences, we shall be equally successful in doing what we 'will to do' in acts which are contrary to our habit and therefore involve sensory experiences that are unfamiliar" (p. 16).

This led him to a reanalysis of his procedure and a fuller realization of the untrustworthiness of "feeling" natural as a direction for right use. He also realized that the feeling which had been made untrustworthy could be made trustworthy again. Meantime, in order to get the direction of his use that would insure a satisfactory reaction he must cease relying upon the feeling associated with the habitual direction and consciously employ his reasoning processes.

But however clearly he worked out the new procedure he found that, upon attempting to speak, the persistent habitual use came with the act of speaking. He finally realized that an immediate response did not give him the opportunity to substitute the new response for the much more speedy old one. Therefore he found, "it would be necessary . . . to make the experience of receiving the stimulus to speak and of refusing to do anything immediately in response" (p. 27). In other words, he was controlling his response and inhibiting the familiar habitual one in order to permit the strange new one to function at such a time as he should decide. This control was not gained in a moment, it came only after long and persistent effort. This inhibition of the old must be maintained throughout the process of projecting all the steps of the new. Every preceding step of the new must be kept in mind as a further step is projected. Here again a marked control is necessary to insure use of the new. At the point where all is ready for the new use to be attempted, a conscious inhibiting of that activity is essential, until it is decided to speak or not to speak or to do something entirely different. In short, the new activity must be as consciously and definitely inhibited as the old. Then and only then is one ready to practice and perfect the new use and definitely substitute it for the old which eventually becomes permanently inhibited.

In other words, we must not disregard the old activity we are trying to change or eliminate, but must bring it definitely into consciousness in order to control it. It is as important to know what not to do as it is to know what to do. Many people display a tremendous willingness to do something, but, as Alexander also points out, the "will to do" may be merely doing the wrong thing more intensively. To be effective this willingness must be coupled with the right direction of effort.

Other illustrations of transforming wrong uses of the self are reported by Dunlap (1932). Some of the experiments suggest the importance of controlling response in order to change it. Merely repeating the desired response may not be adequate. The habitual response may need to be unlearned "through the deliberate repetition of the motor performance which is to be disintegrated or unlearned" (p. 15). This procedure is illustrated by typewriting experiments in which the wrong habit of striking the keys in the order h-t-e instead of the response t-h-e was transformed into the correct activity by directed overuse of the wrong response. By deliberately writing the habitual error "hte" on the typewriter a hundred times, while consciously recognizing its wrongness and at the same time projecting the steps which led to the correction of the error, the correct response was made habitual and replaced the wrong response. This experiment illustrates the controlled use of repetition to produce a negative practice effect.

The important rôle played by controlled effort should not be disregarded. It is only through right habits of controlling the direction of effort that the overuse of the wrong activity may destroy its effectiveness as a habit and thus clear the way for the substitution of the correct habit. Wearing out a habit by forced overuse is an effective method only in proportion to the amount of conscious control exercised by the individual in the use of the self.

Comprehension and conscious control are two prime essentials in changing from a wrong use of self to a right one. Knowledge of wrong use alone is not enough. We feel more comfortable responding to familiar sensations arising from the wrong use we have previously learned than we do with the new sensory experiences that, being unfamiliar, feel wrong. We so assiduously seek the security which familiarity brings, it is not surprising that as we grow older we tend to use our habits of control less in adapting to new situations, and to rely more upon routine, automatic habits established in some past situation. As our experience increases we acquire such a load of habitual ways of thinking and acting that new situations pain and annoy us unless we can bring out a bevy of comfortable old habits to see us through. We employ our innate tendency to use and control our activities in the formation of a more or less extensive set of behavior patterns, and then become set and inflexible and make little further effort to establish new patterns to meet new factors in the environment.

It is not surprising that such phrases as "You can't teach an old dog new tricks" and similar half-right adages become equally applicable to the human being and to the dog. "You can't change human nature" has long been the theme song of the defeated, the lazy, and the uninformed or merely stupid. The "old dog" can learn new tricks and "human nature" can be changed, slowly and with difficulty at the cost of great effort, perhaps, but changed nevertheless. Both pronouncements are being demonstrated in countless ways, but we will no doubt continue to prefer believing the familiar saws which make us "feel" better as we cling to our old habits. Above my desk hangs an etching of two Scotch terriers. One looks longingly at the well-gnawed bone which the other is zealously guarding, and the caption reads, "A poor thing, but mine ain." Thus do we fondly regard our habits.

Many habits, of course, are constantly being modified or discarded as different conditions make changes necessary for adjustment. Habits are only relatively fixed; even the most rigid display a certain flexibility of pattern within limits prescribed by elements in the situation. However, for the most part, habitual behavior tends to maintain its characteristic pattern as long as conditions remain relatively constant.

The steps in changing a habit may be briefly summarized as follows. Understand the behavior problem and recognize that it involves both the familiar old habit and the strange new form. There must be an incentive to change the behavior which is strong enough to carry through the process until the new form ceases to feel strange and operates habitually in place of the discarded form. Both the old and the new forms must be brought under conscious control. The new form may be made to feel right through meaningful repetition, conditioning or association with some emotional reaction. Make the new or substitute habit a satisfactory avenue for the discharge of the energies usually employed in the old. A habit may be changed or eliminated by disuse or from overuse, but an easier and more effective way is to transform one habit into another which is more acceptable.

Most of our lives we will no doubt be learning new patterns of habitual behavior or changing old ones into more effective or satisfying forms. The greater the changes in our environmental conditions the more we will need to change our habits if we would use them in effective methods of adjustment. Much of our habitual behavior will persist relatively unchanged to form the framework of our personalities. Some habit patterns will appear for a time and then disappear or be transformed. On the whole, we bring orderliness into our behavior when we stabilize it into habitual forms. What these habitual patterns of behavior are and how they contribute to effective and satisfactory living may well be investigated by each of us. Our weakness as well as our strength may lie in the habits which control our lives.

Questions for Yourself:

1. What habits do you have which clearly illustrate the value of right habits as conservers of energy?
2. Do you have childish habits which persist to cause you embarrassment or difficulty in adjusting to college life? How can you eliminate or transform these ineffective habits?
3. Is there an habitual behavior pattern it would be to your advantage to establish? Plan the best procedure to do this. Will you use your plan in establishing the wanted habit? Will you establish the habit?
4. How much do you control your habits and how much do they control you?

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CHAPTER V

LEARNING AND HABITS OF STUDY

The process of learning goes on during any and all of our active contacts with our environment whenever some modification takes place in our behavior based on previous behavior. Learning is change. It is reaction. It is adjustment. We shall not assume that all learning leads to improvement; we shall consider learning as modifying behavior rather than only improving behavior.

Learning and Maturation

There are changes, reactions, and adjustments, however, which are not the result of learning; they may be the result of progressive maturation in bodily growth. Such activities are unlearned and occur during development and growth irrespective of previous behavior. They are not the result of repetition, imitation, or observation. A classical example of unlearned activities occurring in maturation independent of previous behavior is that of the Yucca moth given by Lloyd Morgan (1896) and cited by Stone (1934).

> Of such exquisite adaptation we may take, for example, the instinctive activities of the Yucca Moth (*Pronuba Yuccasella*). The silvery, straw-colored insects emerge from their chrysalis-cases just when the large, yellowish-white, bell-shaped flowers of the Yucca open, each for a single night. From the anthers of one of these flowers, the female moth collects the golden pollen, and kneads the adhesive material into a little pellet, which she holds beneath her head by means of the greatly enlarged, bristly palps. Thus laden, she flies off and seeks another flower. Having found one, she pierces with sharp lancets of her ovipositor the tissue of the pistil, lays her eggs among the ovules, and then darting to the top of the stigma, stuffs the fertilizing pollen-pellet into its funnel-shaped opening.
>
> Now, the visits of the moth are necessary to the plant. It has been experimentally proved that, in the absence of the insects, no pollen can get to the stigma to fertilize the ovules. And the fertilization of the ovules is necessary to the larvae, which in four or five days are hatched from the insect's eggs. It has been ascertained that they feed exclusively on the developing ovules, and in the absence of fertilization, the ovules would not develop. . . .
>
> These marvellously adaptive instinctive activities of the Yucca moth

> are performed but once in her life, and that without instruction, with no opportunities of learning by imitation, and, apparently, without prevision of what will be the outcome of her behavior (Morgan, p. 44; Stone, p. 352).

Unlearned activities which are apparently inherent in the organism and occur without previous exercise should be identified if possible apart from learned activities which bring about modifications as a result of former behavior. The learning process is so universal and progresses so simultaneously with growth that it is difficult to conceive of learning as a process dependent upon previous exercise of the activities involved. Although the process of learning is more or less dependent upon development and maturation, it is probable that development and maturation are likewise functions of learning. The interdependence in human beings of learned activities with unlearned activities initiated at certain levels of development and maturation is as yet not clearly defined in experimental literature. So-called unlearned activities occur when the organism is ready to act and when it is sufficiently stimulated to act. Learned activities on the other hand must wait for the natural functioning of the body resulting from progressive levels of maturation to initiate the activities from which we learn about ourselves and the world around us. When once an infant has experienced food getting, it has experienced many activities, some of which are observable in sucking movements. Some change takes place in the functioning of an infant's organism after his first experience with food. Subsequent behavior is gradually modified during the complex developmental process of learning to eat. This is learning. From various modifications in a child's reactions to his environment, adaptation is directed through the learning process.

Training and maturation. The speed and effectiveness of learning is dependent upon training. But training has not been found effective until maturation of parts of the organism is adequate for the expression of the activity to be trained. Gesell and Thompson (1929) studied identical twin girls, one of whom was given a chance to climb a set of five steps, to practice this activity of climbing, and receive training in it; while the other twin was not provided with this experience. When the twin who practiced was one year old, she climbed the steps alone in twenty-six seconds and did it with ease and enthusiasm. The other twin with no practice climbed the same steps alone in forty-five seconds at the age of a year (fifty-three weeks). Three weeks later when they were both fifty-six weeks old, the trained twin took eleven seconds, while the other did it in fourteen seconds. This study suggests some relation between effective training and maturation and that learning specific activities is dependent to some extent upon the stage of maturation of the organism. Maturation is defined as "those phases and products of growth which are wholly or chiefly due to innate and endogenous factors."

This study of identical twins is concerned primarily with perceptual motor learning and training, but there are many references also to the higher processes of ideational learning and training in which responses depend on maturation before practice and training are effective. Training has little value until the child's mental maturation is at the stage where learning specific things, such as reading, for example, can be productive. One of the intricate problems of education is to determine when the child is ready to learn various subjects. Upon this readiness of the organism to respond depends much of the effectiveness of tuition or training. We are dependent upon this readiness of the organism for our adaptation to new situations.

Learning is a process of control. When the infant learns to control the abundance of activities essential in his adjustment to living, such as to control his body, to talk, to eat, to sleep, and to play, he is learning to control himself as well as others. Starch (1934) refers to the psychology of learning as largely the psychology of control and to education as merely a process of increasing control, however slow it may be. If the process of learning is the means by which we develop control over ourselves in attaining goals, in adapting and adjusting to the complex strivings within us, it would behoove us to know more about this process of learning. The more we can understand the ways in which learning takes place, its characteristics, the conditions and circumstances which stimulate its activity, the more we will be able to exercise control over the means by which we can adapt and adjust ourselves more adequately. As we demand more satisfying adjustments for ourselves, we will seek even greater control over environmental conditions with the minimum expenditure of energy. The increasing complexity of problems in both the business and art of living necessitates economy of learning and control.

Ways in Which Learning Takes Place

Many experiments have been made with animals, children, and adults, in order to study ways in which learning takes place. From these experiments, various laws or rules of learning have been suggested, some of which are referred to as the Laws of Association, the Law of Exercise, and the Law of Effect. If these laws or rules of learning are to be depended upon, their formulation must be based upon observations made under the most exacting experimental procedure. Such observations must be verifiable not alone by the initial experimenter but by other experimenters as well. This means that all materials used, control of conditions, method of procedure, and results must be stated clearly and concisely. When rules of behavior in learning or other activities have been deduced by one experimenter and repeatedly verified by other experimenters, then the behavior of animals or people under similar conditions can be anticipated and controlled in the light of these rules or laws.

Laws of learning. The Laws of Association in learning have been considered since the time of Aristotle. According to these laws we learn through the process of having the parts of our experience associated with one another. In learning or recalling an incident, one stimulus will recall another and these stimuli will be related to one another in similarity, contrast, time, or space. Many of our learned habits, such as the complex activity of dressing for the day, are automatically performed through the laws of association, one act is closely associated with another, and a sequence of acts results in the completed task. Many habits learned in driving a car are dependent upon these so-called laws of association. Control of those associations necessary in building those habits makes the habits useful.

There are many natural associations between words because our experience has always found them associated. These associations are illustrated by association tests such as the *free association test* and the *controlled association test.* In the free association test a word is presented to you and you are asked to respond to it at once with the first word that comes to mind. For example, the word "dog" usually brings the response of the word "cat"; "light" calls forth "dark"; "table" arouses the thought of "chair." These word associations are not absolutely free, especially if any unusual experiences are recalled by the stimulus word. In this case, you will deviate from the usual response and respond with a word that fits your own individual experience, and such response may not be so prompt. In an attempt to clear up conflicts or detect a person's knowledge of some event, a list of stimulus words can be planned, in which a few key words have reference to the conflict or event. The key stimulus words in a list will usually arouse response words which reveal one's experience or cause delayed responses in an effort to conceal the experience. In the controlled association test the response words have a specific relation to the stimulus words, such as a part of a whole (finger-hand), or as opposites (forward-backward).

The Law of Exercise in learning is closely allied to the laws of association, and implies that repetition of experiences leads to their firmer association. The law of exercise, expressed in terms of the laws of use and disuse, explains that when certain modifiable connections between a stimulus and response have been used repeatedly, other things being equal, the connection is strengthened, and that when certain modifiable connections between a stimulus and response have not been used for some time, other things being equal, the connection is weakened. In other words, learning by repetition in terms of drill and practice has been considered one of the ways in which learning occurs. The law of exercise has not been found to operate to the extent believed effective at first. No repetition is exactly a duplicate performance. Repetition is not involved in much of the learning of adults. When it was observed in the learning of animals and children it was found that those acts or ideas were learned more effectively which were most frequently associated, or most recently associated, or most vividly associated. An important modification of the law of exercise has been suggested in that mere repetition without "belongingness" will not make learning connections. Repetition is thought to be more effective in promoting learning when there is some intrinsic value or "belongingness" in the connections established between stimulus and response. Although the precise meaning of "belongingness" is not agreed upon in the experimental literature it is considered essential by certain authorities in the establishment of learning connections, and repetition without it is ineffective.

The Law of Effect in learning is perhaps one of the most important principles in learning. What we learn and how well we learn depend upon the result. According to this law we tend to repeat those reactions which are accompanied or followed by a satisfying state of affairs. Likewise we tend not to repeat those reactions which are accompanied or followed by an annoying state of affairs.

When a problem is solved, a decision made, or a goal reached which satisfies us and is pleasing, the learning of the reactions in that process proceeds more readily than when the result or effect does not satisfy us or is unpleasant. This law of effect may prove to be the foremost law of learning, the one which supersedes all other laws. It is closely related to the various motives and incentives which are thought to stimulate learning. When behavior is closely connected with some emotion, the law of effect, which may operate in a certain facilitation in learning, is paramount to the laws of association and exercise.

Conditioned response. Another explanation of learning is described in terms of the conditioned response revealed through the experimental work of Pavlov. As you recall from Chapter IV the conditioned response results when a formerly ineffective stimulus becomes effective in calling forth a specific response for which it was not effective in the first place. The ineffective stimulus becomes a substitute for the effective stimulus, only under certain conditions, however, one of which is that at some time the ineffective stimulus must have been present in close association with the effective stimulus.

A similar illustration of the principle, involved in a conditioned reflex in human beings, is a stimulus that causes blinking of the eyes. Suppose you are placed directly back of a piece of glass which is unbreakable, but the repeated striking of that glass causes you to blink or turn your head in some way. If at the same time during the conditioning a bell is sounded vigorously with each stroke on the glass, you will find yourself reacting in a similar way to the bell alone without the stroke on the glass.

For many routine habits of everyday life you are conditioned so that you respond to the slightest cue that may suggest the whole act. An infant in its earliest feeding reactions experiences a complex set of associations in which it sees a mother or nurse, feels itself being handled, smells the milk, hears sounds, has the impression of the nipple on its lips, and soon any one of these stimuli will be a cue for the feeding reactions. Hollingworth (1933) describes all learning in terms of the reduction of cues, and considers this a means of great economy in learning. Another example of conditioning is illustrated by the boy who learns to lift his hat to a woman. When once the act is learned, the presence of the woman will bring that particular response on the part of the boy. Much control of the emotional life of children is conditioned so that proper responses occur in appropriate situations. These effective associations through conditioning do not occur in serial form but in the form of whole behavior patterns. In principle the conditioned response seems fundamentally the same as the principles of association.

TYPES OF LEARNING

Studies of learning have been analyzed into the forms of trial-and-error learning, learning by imitation and observation, learning in the higher skills such as typewriting, and ideational learning or memory. This last form of learning in terms of remembering and forgetting will be considered in Chapter VII.

One of the most frequently applied forms of learning in daily tasks as well as in experimental situations is that of trial-and-error. The method of trial-and-error learning is used in the acquisition of motor skills through practice, as well as in the higher mental processes of reflective thinking through reasoning. It enters into learning by imitation and observation, by memorizing, and by insight. Imitation of action and memorizing of verbal materials can easily be a part of the trial-and-error process. Overt movements accompany ideational learning or precede insight, and, in turn, ideational learning and insight involve overt action.

Studies of learning often include three classes of material, the verbal to be considered further in the chapter on "Remembering," action developing into skills, and ideational learning. Some of the experimental studies given here to illustrate primarily the trial-and-error method of learning will consist predominantly of overt movements, such as maze-running by animals, or ball-tossing by human beings; other studies will consist predominantly of verbal and ideational materials, such as learning telegraphy. Trial-and-error learning will be illustrated by means of three experimental situations extending from its simpler forms in the maze-learning of animals, through skills in ball-tossing, to the more complex form of learning telegraphic code.

The most direct and simplest form of trial-and-error learning occurs in the maze-learning of animals. Mazes have been used for about a half century, and some 1,500 learning experiments have been made with the white rat as subject. In 1898 Thorndike reports an early maze-learning experiment with little chicks in which the chick was placed at *A*, Fig. 6, to find its way out. His description of the behavior of a chick, put in a pen similar to *R* with walls 11 inches high and an inclined plane at the exit, suggests the typical behavior of animals in maze-running. The historical significance of this early simple apparatus, in which the walls were made of books set up on end, is realized when one discovers that this unique experiment has been followed by maze-learning experiments extended to worms, fish, turtles, squirrels, cats, dogs, rats in a great complexity of runways, and to people in the form of finger and stylus maze experiments.

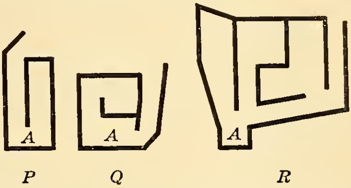

FIG. 6. Ground plan of the first "pens" or mazes used by E. L. Thorndike in experimentation in the learning of animals. From E. L. Thorndike, *Psychol. Rev. Monog.*, 1898, 2, 4, p. 35.

Mazes in general are characterized by an opening, in which a hungry animal is placed, and by many alleyways, many of which are blind alleys (cul-de-sacs) with one of the alleys leading to a food box. Many features are common to maze experiments with animals: the animal is always motivated in some way, usually by hunger; the incentive is food; and the problem is to overcome some obstacle in reaching the incentive. The rate of learning can be measured in several ways; the total trials necessary for the animal to reach the goal; the time per trial; the errors per trial; and the distance run. The nature of the learning process is described by means of several factors: many trials of reactions to the situation; gradual elimination of faulty responses and errors; gradual selection and fixation during successful performances of those reactions that were satisfying; and the final behavior of successful reactions which enabled the animal to satisfy its urge in the quickest time.

In all experiments with animals, whether the rat in the maze, the cat in the puzzle box, or the chimpanzee piling up the boxes to reach the suspended banana, motivation is necessary. The stronger the urge, the greater will be the learning activity.

Animal experimentation for study of the learning process has its advantages, but one of the greatest difficulties is over-simplification of the learning process. The human learning process is very complex and difficult to study, and we are not sure that the features of animal learning are directly applicable to those of human learning.

Trial-and-error learning in the complex human learning of skills is illustrated in ball-tossing. The subject was required to keep two balls going with one hand, catching and throwing one while the other was in the air. Each practice period was continued until the subject reached the level of performance in which there were 200 successful catches. The curves in Fig. 7 which show learning of this particular skill are referred to as curves of learning, but they are only samples of total performance. The elimination of misses is very rapid as shown in curves E-1 and E-2. The average number of successful catches as shown in curves A-1 and A-2 represent a gradual gain in learning.

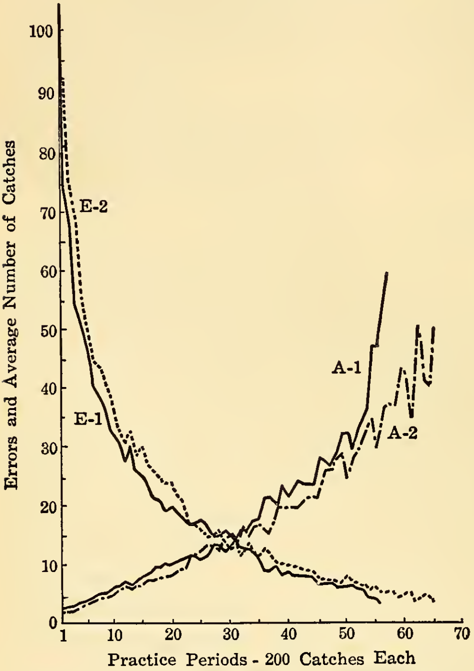

Fig. 7. Performance curves in learning the skill of ball-tossing. E-1 and A-1 are the error curve and the curve of average number of catches per practice period of 13 subjects practicing once a day. E-2 and A-2 are the corresponding curves of 12 subjects practicing twice daily. From J. Peterson, *J. exper. Psychol.*, 1917, 2, p. 195.

More complex motor and ideational learning of skills is found in learning to send and receive telegraphic code reported by Bryan and Harter in 1897. A student was tested once a week for the number of words he could send or receive in several two-minute periods. The results in the form of receiving and sending curves, Fig. 8, show more rapid gain in learning to send than to receive. If the experiments had continued longer than these curves of sample performance show, the receiving curve should have exceeded the sending curve, since experienced telegraphers receive faster than they can send. Motor elements are important in learning telegraphy, but the verbal and ideational factors are also involved.

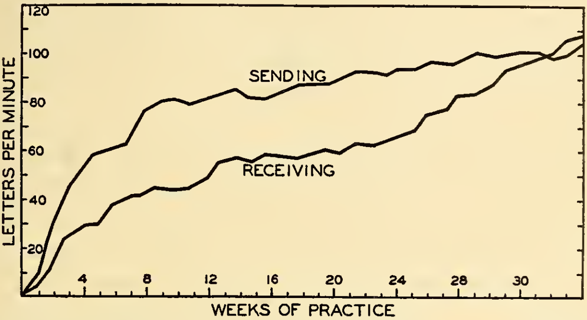

FIG. 8. A performance curve for one individual learning to send and receive in the telegraphic language. From W. L. Bryan and N. Harter, *Psychol. Rev.*, 1897, 4, p. 49.

In many cases of trial-and-error learning, often referred to as trial-and-accidental-success learning, there are occasions when insight occurs. This is shown by a sudden improvement in learning. Thurstone believes such a spurt in learning is an elimination of errors without the errors having been made overtly. Guthrie considers evidences of insight an indication of the result of accumulated habits. It is believed by some that evidences of insight in the progress of learning are preceded by a trial-and-error process leading up to sudden improvement. According to others, insight is an organized response at the level of conscious behavior in which things are suddenly seen in a different pattern than they were before.

Trial-and-success learning is carried into many of the learning processes of man, such as driving a car, in which the verbal, motor, and ideational materials are all involved. Man uses imitation, observation and thinking—yes, and insight too—to aid his efforts in learning. Animals are evidently unable to learn by observation, but they are known to take the slightest cue from an experimenter, therefore all experiments with animals must be carefully controlled. Man uses observation to his great advantage in learning by discriminating those reactions of his own which are helpful to the learning tasks.

CURVES OF LEARNING

Curves of learning are graphic pictures of the change which takes place in behavior during the progress of learning activities. This change in behavior is usually thought of as increments in performance, and measured in terms of the amount accomplished but there may be decrements in performance, as well, measured in terms of the amount of time, or the number of errors in successive trials. Learning is usually a process of improvement evidenced in the tedious process of eliminating faulty movements in perceptual motor learning of the trial-and-accidental-success type, or in the difficult process of inhibiting disadvantageous verbal habits of thought in the ideational learning of problem solving. When we interpret progress in performance in terms of the reduction of time, errors, mistrials, or awkward movements, as well as the increase in successful movements or sequence of thoughts, the learning curve may either descend, or ascend, as you see in Fig. 7.

We cannot think always of learning as improvement. It really is not a gain at all times. We learn faults; we learn awkwardness; we learn vice as well as virtue; we learn wrong associations in our experiences. There is so much unlearning to be done. There is constant need to forget. The art of forgetting and the art of freeing ourselves from learning habits which are not helpful are a greater part of the learning process than we are ready to admit. Further discussion of the process of forgetting will be given in the next chapter.

The learning curves, which give us a picture of the amount, rate, and limit of progress in learning brought about by practice and training, differ for individuals. Their shape depends upon various factors, such as the activity itself, previous training of the individual, capacity of the person, his methods of work, circumstances under which he works, strength of incentives, and driving force of motives. Hence there may be many specific learning curves, none of which is *the* curve of learning representative of learning in general.

You can develop learning curves of your own for any simple tasks by keeping a record of your rate of progress. Try printing the alphabet backwards; record the time each successive trial takes and continue the trials until you have apparently reached your best record. Or diagnose your ability to read silently. Gates suggests that you determine your normal rate of reading silently, not the speed of reading alone but reading with full understanding of the meaning of the article. Start with a good magazine article, if you like. Time yourself and record the number of words read. Tests of graduate students varying in ages from twenty-five to fifty showed an average rate of 250 words a minute. About 12 to 18 per cent read only 165 words or less a minute. People ordinarily speak at an average rate of 160 words per minute. If you wish to improve your ability to read silently and at the same time comprehend what you read, read silently about ten minutes a day using history, chemistry, literature, or any subject which requires some effort to comprehend. Record your own learning in terms of the amount read for the same period of time on successive days.

Plateaus in learning progress. The flattening out in a learning curve, seen in the receiving curve in telegraphy, Fig. 8, is referred to as a plateau. Bryan and Harter (1897) in their study of telegraphy are the first to have reported this characteristic of a plateau in learning curves. They account for this "seeming to stand still" progress as a hierarchy of habits. A learner has accomplished the integration of simpler habits and is ready for a higher order of habit patterns. Letter habits are perfected in receiving words and word habits become highly integrated in receiving sentences, but a delay might come in the word habits which were automatized previous to the functioning of the sentence habits and thereby cause a plateau. Plateaus in typing are thought due to slumps in attention and interest. A shift of emphasis or change in procedure would produce plateaus. Or they may be caused from unfavorable external conditions. Smith (1930) established two negative results that (a) plateaus do not usually occur in the learning of a relatively simple process, and (b) even in complex processes they do not necessarily occur. Hunter (1934) offers the hypothesis that "plateaus may be a genuine and necessary aspect of certain processes of learning, and in other instances they may merely indicate the experimenter's failure to keep working conditions constant for the subject."

Physiological limits. From a practical point of view the interpretation of the plateau has been given as the limit of the individual's ability. There is a limit supposedly determined by the physiological condition of the organism which is reached in the performance of many tasks, a point beyond which the learner cannot go, and practice has little or no effect. Gates refers to the physiological limit as that degree of ability which a particular person cannot surpass because of absolute limits in the speed or complexity of motor or mental response. Such a limit is not to be connected with the theoretical implication of a plateau, whether it be shown in a learning curve or experienced in the effort exerted in solving problems. Maximum performance determined by the physiological limit is seldom achieved. Sufficient incentives have induced athletes to break records repeatedly and approach their maximum performance, but in ordinary living from day to day few of us emulate the athlete.

Motives and Incentives in Learning

Studies of the learning process are made from two points of view. Some investigators are concerned only with the means by which the goal is reached, others are concerned only with the goal. Interpretation of results may vary according to that phase of the process which is emphasized. Involved in either point of view, however, are the motives and incentives in learning: the motives, forces from within you, attitudes and inner strivings which initiate the learning process and keep it going; the incentives, forces from without you, which at some time you have experienced with a satisfying result or outcome, hence they arouse your desire to work diligently. When you have an urge to do something, but cannot know its outcome until you perform the task, if the outcome is satisfying and pleasant you will quickly learn to anticipate a similar goal a second time, a third time, and so on. Such a connection is quickly learned between the beginning and end of that series of activities, and will be used repeatedly. The law of effect is operating in its positive form.

What are the motives and what are the incentives which activate learning? Failure to control motives is a great source of difficulty in learning experiments. A rat which is not hungry does not run the maze. If you are not thirsty you do not seek a drink. Fundamental motives for learning are found in urges to live, to protect oneself, to be comfortable, to receive approbation, and so on. Soon the child realizes that his limited mode of expression is not bringing him all he desires and he must find additional means of indicating what he wants. New words are used, sentences are formed, new activities are introduced so that he can climb higher, ride faster, express his likes and dislikes more forcibly. Written and printed words are soon found useful in understanding how he can increase control over his environment.

As a child's organism matures and shows greater readiness to respond to higher skills and to express higher integrations of language, thoughts, feelings, and attitudes, there is increasing complexity in the control over those forces in environment which he desires to use for his betterment and for emotional expression. Desire for success, feeling of pride in accomplishment, fear of disappointing someone we love, desire for revenge, urge to explore, avoidance of unpleasant situations, and many other motives operate within us in varying degrees. If the outcome of these activities has been experienced as either satisfying or annoying, we learn to anticipate or to avoid the goal previously experienced. From these past experiences, we are also prepared to judge the value and significance of a new goal when once it is experienced.

Reward and punishment. Thorndike (1932) has reported many experimental studies of animals and people as to the effect of reward and punishment in learning. Rewards in some form have been found to enhance learning. Punishment does not always "stamp out" learning, as has been popularly supposed, it may strengthen some activities at the same time it weakens others. Reward is more universal in strengthening the desired connections than punishment is in weakening the undesired connections. Reward does not need to be in material form such as money, or a present; it often is in the feeling of pride, recognition by others, release from routine tasks, commendation from one you admire. It must be remembered that reward, as an incentive, is more effective if it is obtained immediately and is useful.

Praise and blame, or encouragement and discouragement, are forms of reward and punishment which have their effect on the progress of learning. Hurlock (1924) studied the influence of praise and reproof on a group of school children from nine to twelve years of age. Five practice periods of 15 minutes each in arithmetic were given to 112 children. There were three groups with identical average intelligence test scores. The control group repeated the tests without any comment regarding their first performance; one group was praised, and informed that they made high scores and did neat work; a third group was reproved and told that they had been careless and slovenly in their work and should be ashamed.

The results of this learning experiment favored both the praised and the reproved groups more than the control group. The control group improved 52 per cent, the praised group 79 per cent, and the reproved group 80 per cent. From various studies of social rewards in this form, praise is found to be superior to reproof primarily for older children, regardless of sex and age.

In the learning of skills, or in school projects, knowledge of one's own results may prove a sufficient incentive to motivate learning. Likewise, knowledge of the advance made by others in the group often serves as a spur in learning. Success usually reinforces the outcome, and failure often weakens it. Rivalry and competition in the group are influencing factors in any tasks. Group rivalry has some effect, but individual competition is superior in its effects.

Learning that takes place during excitement or is accompanied by strong emotions tends to fixate those parts of the process which lead to the result. Less practice or repetition is necessary in such a situation. The increase in muscle tonus due to excitement and the resulting increase in activity are effective factors in accelerating the learning of such an experience to a degree, in some cases, of almost super-learning. To quote Guthrie (1935),

> The utility of physiological excitement and of emotional reinforcement of action lies not only in the additional energy of movement which may carry us past the obstacle, but in the effect of excitement on learning. This is twofold. Excitement facilitates learning and the stereotyping of habit and the conflict which is responsible for the excitement breaks up old habits. The outcome is often an improved adjustment in the form of a new habit routine adequate to the situation (p. 113).

TRANSFER OF TRAINING

The transfer of habits once formed to the formation of subsequent habits in a new situation has been recognized for some time, but as yet an adequate explanation of the fact has not been found. The whole process of education is based upon the possibility of wide transference of habits and training. This possibility was merely an assumption until the psychological laboratories were able to establish some reality of transference. The problem of transfer may be stated specifically by asking whether your training in one skill, such as football, facilitates your training in another skill, basketball. Do your habits of memorizing poetry aid you in developing habits of memorizing other things? Or the problem of transfer may be stated more generally by asking whether your general development resulting from learning and doing of various tasks tends to facilitate your general efficiency in subsequent learning and doing.

Many of the early studies of transfer of training used verbal materials to reveal some basis for the challenged claims that there was transfer of training in formal discipline derived from such studies as Latin, mathematics, Greek, and so on. Since that time some transfer effects have been found for specific materials learned under equivalent conditions. The transfer may be positive or negative, that is, learning one skill or subject may transfer and facilitate learning another skill or subject, or learning one task may hinder and interfere in learning another task. It is generally agreed that some transfer may occur in all learning and training from simple motor tasks, through higher complex skills, in memorizing, and for ideational problems. For similar materials learned under like conditions transfer of training is considered positive and effective, in that a second problem is learned more quickly and with less errors. For unlike materials there are three possibilities: the transfer effect may be positive in varying degrees, or it may be negative and interfere with other processes, or there may be none at all, dependent upon the specific conditions of the situation. The following illustrations reveal a positive transfer for the most part. The negative transfer, as well as positive, will be considered in the chapter on "Remembering."

Some of the earliest studies in the type of cross-education referred to as bilateral transfer were made by Swift (1903) from his results of ball-tossing. He found an increased skill in the left hand after practice had occurred only with the right hand. Starch's (1927) experiments with star-tracing and mirror-drawing revealed positive transfer of training from the right hand to the left hand. When a subject traced only half of a six-point star with the left hand, then made ten complete outlines of the star with the right hand, and then traced another half-star with the left hand, the average improvement of the left hand was 49 per cent and that of the right hand 53 per cent.

Salisbury (1934) studied transfer effects of training in logical organization involved in outlining. An attempt was made to determine whether outlining, when taught as a conscious method of analyzing thought and of organizing data for specific purposes, would produce changes in the learning habits of pupils that would transfer to other situations. In the English classes of the seventh, ninth, and twelfth grades, 474 pupils were matched by IQ (Intelligence Quotient). Their training was accomplished by thirty carefully prepared lessons in outlining and summarizing. The conclusion was reached that training in the conscious use of outlining, when taught through practice with general materials, will transfer to specific study situations and tend to improve the mastery of content subjects, general thinking and reasoning ability, and comprehension of reading.

Experimental studies confirm the knowledge that transfer of training does occur in all functions that are closely allied. This obvious fact is one of the most fundamental principles in effective education. Psychology is primarily concerned with the amount of transfer that occurs from one activity to another under known conditions.

There is little evidence of transfer in training in the world at large outside the educational fields. Within a few vocational fields previous training may prepare one to advance to higher levels of achievement within related fields of work, which resembles a general transfer effect. A good salesman may become a manager; a clerk may become a vice-president; a good physician, a surgeon; but seldom is efficiency in one task a guarantee of efficiency in another task in unrelated fields. We have little or no evidence that traits of kindness, generosity, or friendliness transfer to all situations.

Control of Learning for Efficiency

Learning is the means by which you maintain your most favorable adjustment between the forces within you and the forces in the world about you. Therefore it is an advantage to know the many ways in which you can control the speed and accuracy of learning for more efficient mastery of yourself and your environment. In this part of the chapter we shall refer to several factors in the economy of learning concerned with the mode of presentation of material, conditions of learning, and characteristics of the learner. The three paragraphs which follow will give you a general idea of the factors in effective learning which several authorities considered most important.

According to Bills (1934) the following factors are most important in the economy of learning: (1) distribution of effort; (2) the kind and amount of material presented; (3) the methods of presentation; (4) the attentive and volitional attitude of the subject; (5) the motives and incentives that are operating; (6) the amount and forms of guidance or tuition introduced; (7) the organic condition of the subject; (8) the effect of individual differences in age, sex, and intelligence.

Book (1932), who has studied the technique of learning for many years, enumerates several important factors in economical learning. Some of these factors are the acquisition of more effective methods of learning and work, the proper motivation of the learner, making the learning situation most successful as a stimulus, making learning truly purposive and intelligent, having teachers and learners make proper adjustments to the factors that produce the important fluctuations in a learner's working efficiency and his ability to deal successfully with the many special difficulties that any complex instance of learning presents.

Hollingworth (1933) emphasizes the importance of the use and understanding of language if we wish to have mental control over school activities. We do not *really see* and *hear* all of the words that confront us; we react quickly to effective parts of them without waiting for the remainder. Just how a word will affect one may be seen clearly to depend on the *context* in which it now appears, as well as on past contexts. There are many important elements of control from the present context in which a word occurs, or within our linguistic environment according to recent writers. An adequate vocabulary for reading and speaking is one of the essentials in understanding language and controlling your linguistic environment. Efficient learning is handicapped by a limited vocabulary. It is difficult to control your interpretation of things read when you encounter the extensive vocabulary used in books, current periodicals, and magazines.

The distribution of effort and practice in learning has been studied experimentally from several points of view. It is well known that the rate of improvement in learning is affected by the distribution of practice periods in relation to the length of the intervals between these periods. How long and how often should one practice for an assurance of optimum learning? Starch (1912) conducted an experiment illustrating the effectiveness of distributed effort in which 42 subjects were divided into four groups to work upon a problem of digit-letter substitution. The total working time for each group was 120 minutes. Group I worked ten minutes at a time twice a day for six days. Group II worked twenty minutes at a time once a day for six days. Group III worked forty minutes at a time every other day for six days. And Group IV worked 120 minutes at one time. The results showed very little difference between the 10-minute and 20-minute groups, but the 40-minute group was decidedly inferior, and the group working steadily for 120 minutes made the worst record of all. This experiment also illustrates the advantages of distributed effort over massed effort. Just what the amount of material and length of rest pauses should be for optimum learning remains to be determined. Intermittent presentation of materials usually results in more efficient learning. The variables are functions of the specific kinds of material to be learned, the conditions of learning, and the behavior of the learners. It is generally agreed that distributed practice has its advantages for the attainment of certain levels of performance over practice which is continuous or massed.

Ruch (1927) in his summary of experimental literature regarding the distribution and massing of practice for human subjects finds the following of major importance: (1) The general characteristics of distribution of practice, such as the number and length of the practice periods, the intervals between the periods, the degree of learning being considered, and others; (2) the type of material being learned; (3) the age of the subjects; (4) the criterion or aim of the learning as recall, speed, accuracy, improvement, etc.; (5) the order of repetitions within a practice period; (6) the manner of studying; (7) the stage of learning, whether distribution is equally effective at the initial and final stages of learning and in the exercise of a well-learned habit.

There is no conclusive evidence for the most effective distribution of practice periods that would apply to all materials under all conditions for all subjects, but most investigators agree to the following statements. There is wisdom in distributing effort, trials, and practice with intervals of rest or other activities. How long the intervals between training or practice periods should be depends upon the kind of organism; if it is a human organism, much depends upon the age of the person, time of day, conditions of work. The length of practice periods is dependent upon many factors, but results are usually more effective with more frequent rest periods. Longer practice periods are probably better for the higher forms of verbal tasks, but here again meaningful material may be learned under different situations than nonsense material. Also any material that closely affects the feelings, whether pleasant or unpleasant, is learned in a shorter time than neutral material.

Whole and part learning. Another very important method of efficient learning deals with the effects of "whole" and "part" learning. Should you learn a lesson or memorize a poem as a whole or master each part as you go along? Much learning has been in parts, step by step, but the wisdom of part learning was challenged long ago. If the two methods are studied for their value in retention, the tendency has been to favor the whole method in preference to the part method. A poem was better learned if read through and learned as a whole rather than parts, but here again wastefulness may occur in over-learning the first part during the process of learning the whole.

Crafts (1930) has experimented with card sorting to determine the relative merits of whole and part learning. The whole method was superior to the part method for both the purposes of speed and the amount of practice required to attain a given speed. When the practice was spaced and not massed, the whole method was consistently superior and there was less fatigue.

Bills (1934) cites two theories that are valid. (1) Whole learning achieves an integration which part learning can achieve only by extra effort in connecting the parts together. (2) Part learning offers easier units which can be adjusted to the capacity of the learner. Either depends on the individual situation.

Practical advice depends on determining the better method for the particular material at hand. The whole method of learning breaks down when material becomes difficult and the process of learning extends over a long period of time. In this case, however, one might say that the "whole" in the shorter and simpler learning processes is somewhat equivalent to the "part" in the longer and complex learning processes. In a sense then the "whole" method of learning remains supreme.

Conditions surrounding the learner. Several factors should concern the learner if he desires to learn the behavior patterns which maintain his comfortable balance with the outside world. Learning is very much influenced by conditions which surround the learner at the time. The best physical condition is advisable for optimum learning. The learner's attitudes of attention, of muscular tension, his intent to learn, his moods and feelings will definitely influence the accomplishment. Certain physiological conditions such as fatigue, conditions of worry, loss of sleep, the effect of drugs, the type of diet are factors affecting learning ability. Environmental factors should favor the learner. Further discussion of these factors will be found in the chapters, "How to Concentrate for Work," and "How to Use One's Energies Efficiently."

Chronological age and learning. Variability in learning occurs with age. Under normal conditions there is gradual increase in rate of learning up to maturity, but considerable loss on the average with advancing age. The extent to which this variation is dependent upon neural plasticity, previously formed habits, or other factors is not known. The studies in adult learning by Thorndike and others should prove a great stimulation to adults and change their general attitude toward formal education. Learning is living; it should be an active part of living over a much longer period of one's life than it has been in the past. From Thorndike's studies (1928) we discover that the ability to learn increases up to late adolescence with no indication of a decrease up to the age of 25; from the ages of 25 to 42 the decline is very slow; about the age of 55, however, the ability to learn is on the wane. The general form of this curve of the ability to learn is shown in Chapter VII. In Thorndike's words,

> In general, nobody under forty-five should restrain himself from trying to learn anything because of a belief or fear that he is too old to be able to learn it. Nor should he use that fear as an excuse for not learning anything which he ought to learn. If he fails in learning it, inability due directly to age will very rarely, if ever, be the reason (p. 157).

Learning ability at any given age, with other factors kept constant, is very much a matter of heredity. At some time J. McKeen Cattell has said that "What a man can do is determined by heredity, what he will do is determined by circumstances." One of the greatest problems for adults is the fact that they do not want to learn. The movement for adult education needs to be concerned chiefly with incentives and motives that will activate adults to want to use their ability to learn.

Effective Study Habits

The control of study automatically results in efficient learning. If you wish to develop serviceable study habits, you should control your psychological equipment, environmental conditions, and methods of study.

The control of your psychological equipment for study refers to the control of incentives, motives, interests, abilities, and habits. Study is learning under any conditions where there are incentives to acquire knowledge in systematic form for application. Many of the greatest incentives for study arise from needs outside the classroom. Consider the following illustration. Danger from malarial fever was preventing the construction of the Panama Canal. The obstinacy of this problem intrigued certain minds and intensive study was necessary to solve the problem. The need for control of this dread disease was sufficient motivation for the most exacting organization of knowledge and its application to the problem at hand. Interest in the problem increased by leaps and bounds. The abilities of many men were needed to supply the necessary accurate information. Habits of observation, attention, and thinking were coördinated for the originality necessary to overcome the difficulty.

This illustration differs only in degree from dozens of similar examples in life. When incentives to study are insufficient to start the activity of study and keep it going, then only is it necessary to consider rules, hints, and some practical advice. Unfortunately this is the case for most of us during school and college days. Our incentives are too remote and vague, consequently motivation is weak, interest is lacking, our abilities are only partially used, and faulty habits of study exceed good habits.

If this is our study-life, how are we going to face it and set about to improve it? One of the surest ways is to discover some motives, have a clearly defined objective, and become interested in a subject or an event. Start to learn about it, participate in it, assume an interest in it, if necessary, until real interest can develop. Assimilate this new knowledge with previous knowledge and relate it directly to yourself. New knowledge can be kept alive only as it helps you in some way. As soon as you have acquired this new knowledge, use it, talk about it, write about it, make it your own. Genuine interest in a subject bridges over the gap between the desire to study and the beginning of that study. If you find yourself without any interest in the topic, the one thing left for you to do is to make yourself study. This form of self-discipline is often essential in self-control. Studying should call forth your best ability in reading, observation, concentration, and memorizing.

Reading efficiency. The lack of reading efficiency and its resulting handicaps were found by Deal (1934) to be one of the major problems in effective study. In order to improve reading ability of a group of college students, they were grouped for laboratory drill in reading difficulties for at least one hour once a week. During this time they were trained as follows: drilled in rate of reading and comprehension for three minutes each period; directed in finding the ideas of a selection and distinguishing the author's thought from their own interpretation; given training in note-taking with material to be used in their classes; and helped in the problem of attention. Tests were given at the beginning and end of the remedial laboratory work. The median score of 33 on the first test was raised to 67 at the end of the semester. The median number of words read was raised from 180 at first to 195 in the end test.

Pressey (1933) found, from special reading tests given to freshmen at Ohio State University during two years, that 20 per cent of them read less efficiently than the average eighth-grade pupil.

From some of the laboratory studies of reading skill, it has been found that efficient readers look farther ahead and grasp the meaning of more material in a shorter time. Good readers have a longer time than poor ones between seeing a word and speaking it. Eyes do not move steadily across a line of print, they stop four or five times, each about a quarter of a second. The good reader looking ahead has the longest eye-lead.

College students are beginning to realize how handicapped they may be by speed of reading and inadequate comprehension. The effective reader is one who reads fast with understanding of content. Such ability is an asset. You can improve your own speed and accuracy of reading by some very direct exercises similar to those suggested by Gates and cited in this chapter. There is much you can do to train yourself in comprehension. Further suggestions are to read through a topic quickly for a survey, then re-read slowly and thoughtfully; mark your book with notes of important points; become acquainted with the book and its author by noting the contents, preface, and other writings of the author; keep the purpose of the reading in mind; think critically and connect new knowledge with your own information.

Your abilities in observation, concentration, and memorizing are also subject to great improvement by practice and guidance. Some of these improvements will be considered in following chapters. Study habits are so fixed by the time of college years that one of the chief problems of a freshman is to organize more serviceable habits for the new situation in college in which there is less supervision and more self-direction.

Systematic study periods. Necessary habits for effective study are system and regularity of study periods. Kornhauser (1925) reports how Sir William Osler, one of the greatest men in the medical profession, emphasized in a talk to students the value of systematic habits in work. He asked that you take away with you from a man who has had to fight a hard battle, the profound conviction of the value of system in your work.

You can help yourself in building up habits of system and regularity by planning and carrying out a routine for the day with a record of time allotted to sleep, recreation, meals, classes, and study. There are various forms in which such a record can be kept. Do not hesitate to ask for help and suggestions in planning such a schedule. Bird (1931) and Kornhauser (1925) give schedule forms in their discussions of efficient study, but you can easily devise one of your own.

Be actively concerned with studying; compete with yourself in establishing superior habits. Don't hesitate to select a competitor in a fellow student whom you wish to excel, but show wisdom in selecting someone whose abilities are not too much beyond your own. Bird (1931) reports that,

> Efficient study is unhurried, thoughtful effort at mastery, rather than the nervous, hasty behavior—mere dabs at application—which so often results in bare passing grades. . . . Only as the student awakens to the rare delights of intellectual accomplishment and to the need of being an expert in a particular field, only as he realizes that the knowledge he gains is more enduring and satisfying than the trivialities which compete for his time, only as he enjoys the thrill of comprehending and mastering problems can he study intensively and for an adequate period (p. 55).

The control of environmental conditions is well within the student's powers. Overcoming distractions, in order to concentrate and think into the material to be studied, means the best adjustment to surroundings, to one's own physical condition, and to the host of irrelevant thoughts that persist. It is best to put yourself in as quiet a room as is available, and then habituate yourself as quickly as possible to disturbing noises. Adjust chair and table so that you are comfortable, but not too comfortable. Light, temperature, and ventilation should be regulated to your needs. Keep yourself in good working condition, eat regularly, rest sufficiently, and take some regular exercise or recreation. There is a wise proportion between recreational activities and study which one must soon recognize and control.

Become acquainted with the library so that knowledge on its shelves is easily obtained. From the beginning train yourself to use the library as a place for study and not for conversation and looking around. There is much wasted time and energy displayed in libraries. When once you have discovered a reading room in a library conducive to study, you will never forget the satisfaction it gave you.

The control of methods of study depends in part upon conduct of courses, whether they are presented in lecture form, discussion form, question and answers, or group reports. There is one common procedure to them all and that is the making of useful notes. The topical outline is the most serviceable form of recording the meaning of passages in textbooks and the main topics in lectures. Ideas are coördinated by topical divisions in which sub-topics are grouped under main topics. There is greater opportunity in originality when outlining the reading done on a subject than that presented in a lecture for the reason that one can survey the material presented and then organize topics according to the self-recitation study method. In the self-recitation study plan a topical type of outline is made during the first survey reading, and during the second reading the asking of questions is added to the topical outline. Then these questions are answered with new knowledge studied, as well as with other information at your disposal from previous studies. In this way you are anticipating the recitation in the classroom and are better equipped with effective thinking habits on particular topics.

Daringer (1929) reports an investigation by Gray of the topical outline as a method of study. He used 120 outlines, made by forty Grade IX pupils, as a criterion. Three elements were scored:

(1) the selection of a central topic, (2) selection of important details, (3) exclusion of repetitions and unimportant details. There were two helpful types of study, one the preparation of a summary of central ideas, the other the preparation of an outline. Great stress is laid on the necessity for training pupils to pick out the central thought of a selection, and to organize the selection in terms of the main points and supporting details. This practice in organizing ideas is considered a most effective means of study.

Experience in identifying the kernel of a thought and its supporting facts has direct application in preparing for examinations when legitimate cramming takes place. By legitimate cramming is meant a logical review in terms of distributed effort and effective thinking rather than in terms of massed effort and disorganized thinking.

Pressey (1933) has assembled some conclusions from various investigations on this problem of effective study (pp. 358–541). The important points will be given below in abbreviated form as a further guide to students in developing better self-control and more effective study habits.

(1) For effective work, certain prerequisite conditions are important.
  (a) Guard your health and keep in good physical condition if you would work efficiently.
  (b) Do not attempt a full load of school work, and in addition try to spend much time during the school year earning your way.
  (c) Try so to order your existence that problems of emotional adjustment are not critical.
  (d) Try to find a quiet place for work free from distractions and interruptions.

(2) Businesslike methods in use of time are very important for efficiency.
  (a) Learn to plan or budget your time.
  (b) When you sit down to work, do not fiddle or procrastinate; begin at once.
  (c) Plan so that when you are about to do a piece of work, you have the materials necessary.
  (d) Plan ahead so that you do not have to exhaust yourself in last-minute preparation for some examination or other task.

(3) Skill in "selective reading" is exceedingly useful and time saving, both in school work and in adult life.
  (a) Always make a preliminary survey of any material before reading it, to find the general organization and main points.
  (b) Be sure you understand graphs, drawings, tables, formulae, and similar means used to summarize data.

(c) Do not skip technical terms; look them up.
(d) Stop reading every few minutes, and think over what you have read, trying to distinguish the most important points, making applications to what you already know, and reciting to yourself.

(4) Methods of making and keeping records are an important element in efficiency in almost every form of mental work.
  (a) Take notes on both reading and lectures in brief, systematic outline form.
  (b) Take notes in your own words, with any comments which may occur to you.
  (c) Keep your notes on one subject together, and assignments and notes in such order that you can readily find what you need when you need it.
  (d) In looking up references for a report or topic, use cards, and the usual library form of giving reference, so that your material can be easily added to or rearranged.

(5) In any undertaking, a periodic review and appraisal of what has thus far been accomplished is necessary for efficiency.
  (a) Regularly spend some time on a review of your work.
  (b) Review *selectively*.
  (c) In reviewing, relate the material to your own experiences and to work in other courses, and apply it.

(6) Good students are distinguished by the systematic way in which they write examinations and reports.
  (a) Always outline a report or an answer to an essay-type examination.
  (b) Always allow time for reading over a report or examination before turning it in.
  (c) Always read over all the questions of an examination before beginning to write, so that you can plan your time and coordinate your answers.

Questions for Yourself:

1. What faulty habit is making it difficult for you to learn? What plan can you devise to correct this habit? Will you use your plan?
2. How can an assumed interest in a subject aid you in making it easier to learn? How can you convert an assumed interest into a genuine one?
3. How efficient are you in reading? What advantages would improvement in reading ability give you?
4. How effectively do you control your methods, time, and place of study?

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CHAPTER VI

HOW TO THINK

No one can begin a new day without thinking of his needs and his work, about his family and his friends, those he likes and dislikes. To think is to behave in some way. Thinking is something going on within you that makes it possible for you to adjust to your environment. It is the controlling factor in making you master of yourself and of the people and forces about you. When once you experience the power of thinking at its greatest effectiveness you realize a human force which has possibilities yet unknown. Thinking is a manifestation of the controls which we use in regulating power over ourselves, over others, and over nature. From a practical point of view, we are interested in three questions about thinking: (1) What is it? (2) What part does it play in our behavior? (3) How can we control it? How can we do better thinking —more useful thinking?

What Thinking Is

Our meaning of thinking. It is as natural for you to think as it is for you to breathe; it just happens within you. The task of defining is perhaps the most difficult task, if not actually impossible. It is probably impossible to define thinking in such precise terms that the definition would be completely acceptable to everyone. It is one thing to know for practical purposes what a word means, or a concept is, but it is another thing to define that word or concept precisely.

So let us not quibble over a definition of thinking, acceptable to every logician or psychologist. Let us simply ask, what do you mean, as a practical matter of everyday conversation, when you say "think" or "thinking"? We all understand one another when we say, "I think we ought to start." "I think this is too expensive." "I think of you." "I was thinking of our trip last summer," and the like. By thinking, most people usually refer to whatever goes on in what we are accustomed to call our minds, whether we are fully conscious of it or not. Even dreaming may be included in a broad sense as a kind of thinking. This so-called thinking may be consciously controlled and its course may be directed, or it may be unconsciously controlled as a flow of ideas or mental pictures. To consider thinking in its broadest terms we shall include all types of thinking, whether consciously or unconsciously controlled from that which occurs in night- and day-dreaming at one extreme, up to and inclusive of productive and creative thinking at the other extreme.

The extremes of control over thinking may be differentiated by the degree of conscious control exercised by the thinker. The least consciously controlled thinking is probably that thinking which takes place in dreams, in daytime reveries, at moments immediately preceding so-called hunches. The fact that these mental experiences are occurring with little or no conscious direction does not mean they are not controlled. An unconscious control may have functioned since they are known to be peculiar to each individual and influenced by his past experiences through an intricate internal and external coöperation of activities at the time.

The greatest consciously controlled thinking is probably that which is experienced by the scientist, the research worker, the inventor, the business executive, or the artist during the process of constructive and creative thinking. Discussion of the interplay which evidently occurs between unconscious and conscious control of progressive stages in the thought process from its beginning to its culmination will be considered later in this chapter.

Between extremes of the least and greatest control of thinking, there are differential degrees of control exercised in momentary adjustments, in directing the plans of a day, in managing household or business, much of which has become habitual thinking. If the process of thinking is limited to the few and is considered a rare experience for people generally, the meaning of the term is necessarily limited to the highest stages of controlled thinking. These highest stages are referred to as reasoning and creative thinking. To many persons the term "reasoning" is synonymous with the term "thinking," but various descriptive phrases are used, as constructive thinking, reflective thinking, elaborative thinking, purposive thinking, real thinking, great thinking, clear thinking, straight thinking, good thinking, scientific thinking. Each phrase is used to designate that thinking process which is organized, integrated, highly controlled by the thinker and productive of results.

The principal tools of thinking are fashioned from your personal experiences. The material from which they are made consists of your sensations and perceptions enriched by your imagery and feelings. Your manner of using these experiential materials determines your psychological equipment for thinking. Each new experience contributes to your meaning of words, your understanding of events, the characteristics of an object seen, a sound heard, an emotion felt, or vividness of memories recalled. These tools are not only fashioned from direct perception of these objects, events, and emotions but also from later meanings supplied by recall of them in their absence, together with many associations aroused in your progressive interpretation of their meaning.

Many of the tools are facts, ideas, and imagery derived from your contacts with real situations at home, in college, in meeting your problems and planning for the future. These experiences, both real and imaginary, are not isolated units of thought but are intermingled and enmeshed with associative patterns which influence and modify new impressions. They may retain specific meanings from your limited experience or they may take on a generalized meaning characterized by a concept. In so far as these associative and conceptual patterns of thought are integrated and have some directive purpose they result in productive thinking. The greater your experiences and wider your knowledge, the better your judgment is apt to be.

Methods of studying the thinking process. The higher form of consciously controlled thinking is aptly illustrated by Alexander (1932) when he attempted to describe how he attained the better use of the self. This illustration is an unusual description of how one person was motivated to learn to control his thinking and to overcome a handicap which threatened the fulfillment of his life's ambition. As you will recall in Chapter IV, the task which he set himself, to find out what he did that caused the trouble, intimately concerned him, his ambitions and desires. It proved to be an intensely motivating force that persisted in carrying him through most intricate thought processes and the attainment of his goal. His particular difficulty in inhibiting persistent habitual thought patterns in an effort to attain his goal will reveal to you in great measure the process of consciously controlled thinking.

Great thinkers find it difficult to reveal the processes of their thinking. The achievement of a great composition, the formulation of a scientific law, the development of a philosophical principle, the creation of a plan of action for a business are such subtle procedures that they seem to defy detailed analysis.

Various experiments to study thought patterns have been made in the laboratories. Direct approaches to the study of thinking consist in presenting a problem or task to be thought out by students, and then observing and studying their methods of solving the problem and meeting the task. Indirect approaches consist of experiments applied to problems of association, memory, perception, and action. An experiment in problem solving which involves all the elements of scientific thinking is the problem of disks and circles attributed to Joseph Peterson. Hunter (1928) discusses this very interesting example of the development of thinking as he uses it with his students.

Methods of measuring and testing certain aspects of thinking have been attempted to determine the pupil's progress toward the art of thinking for himself. Noll (1934) studied some of the habits in scientific thinking such as accuracy, suspended judgment, open-mindedness, intellectual honesty, criticalness, and habits of looking for true cause-and-effect relationships. Another study has been made to determine whether reasoning involves the inhibition of persisting habits.

Apart from these specific experiments under control in the laboratory, Luria (1934) has expressed interest in the thinking of primitives and attempted to determine the system of thinking which occurs among the natives of Central Asia by observing their primitive community life. He finds that they do not seem to think by means of abstract relationships of symbols, but by the reproduction of whole situations.

Effect of Thinking on Our Behavior

Everyday experiences in thinking occur in planning of any kind. A certain amount of thinking, both habitual and consciously directed, enters into the routine work of a day, into your schedule for an auto trip, in making a decision, or scheming to avoid an unpleasant task. The more intricate the plan, the more puzzling the schedule, or the more difficult the decision, the more it is necessary for you to think carefully.

Recalling the face of one you love, the smell of camphor, or the new book just purchased, arouses a succession of thoughts and images. They may soon disappear, or as we say, "be dismissed from our mind," or they may persist for a definite time with an intermingling of emotion. The shorter thought patterns in which the goal or satisfaction to yourself is attained quickly are far more common than longer thought patterns, in which the goal is delayed, experienced in reasoning and creative expression. These longer thought patterns are often a complex resultant of shorter thought experiences in everyday living and naturally occur less frequently.

Numerous characteristics of an individual may provoke the longer thought problems. The curious person is constantly initiating thought patterns which often become intricate. The attempt to explain certain effects of electricity for the first time or the influence of cosmic rays prompts scientific research which may lead to endless thought patterns. One who doubts constantly advances his own thinking, unless he makes doubting itself his aim. The scientific mind doubts many theories. The scientist, business man, teacher, or mother frequently find themselves in problematical situations. Problem solving is always thought-provoking, whether it be the education of a crippled son, the development of a savings plan for employees, or the control of malaria. Decision and action in problem solving induce self-justification which is also a constant stimulus to thinking. To justify a certain decision or unexpected behavior one may need to rationalize. Rationalization, discussed more fully in Chapter XVI, is mentioned here because of its superficial appearance of reasoning, and it represents a kind of thinking often demonstrated. Warren defines it as "the mental process of constructing artificial reasons to justify an inference or an act which is actually based on other grounds."

Thinking and language. As far as we know, ability to think is one of the outstanding differences between animal and man, particularly the high degree of thinking controlled by man. Whether animals can be said to think is a controversial question. Some investigators are inclined to believe that there are types of thinking evident in animals, such as a type of organic thinking when a cat has been known to save itself from the sudden approach of a dog; or a type of motor thinking when a hen runs a maze for a morsel of food; or a type of manipulative thinking displayed by the chimpanzee when he piles up the boxes on which he climbs to reach food suspended from the ceiling. Similar manipulative thinking may occur in man when he is confronted with a mechanical puzzle and figures it out merely by its manipulation. Should these be types of motor or manipulative thinking in the lower degrees of control induced by danger, food, or the attainment of some goal, they would resemble short-range thinking typical of puzzle solving. Much of it is the process of trial-and-error thinking, in which rejection of the useless factors and selection of the useful factors finally provide the desired satisfaction.

Man, however, has succeeded in getting what he needs and desires by higher forms of thinking which are more dependent on language. Many forms of symbols, both verbal and non-verbal, such as words, diagrams, algebraic letters, traffic signs, raising of eyebrows, pointing of a finger, or shrug of shoulder are used by man to convey his thoughts to others. They appear to be an inherent part of the thinking itself. Many of the non-verbal forms used in thinking prove more useful and effective than inadequate and misleading words. The language of the foreigner in terms of his recognized words or symbols, such as figure language of the Chinese, means little to you unless you are schooled in its meaning.

Development of your thinking in terms of language which has become meaningful to you varies with chronological age. The development of your thinking as a child may compare as favorably with your power to think at the present time as the latter will compare with expected development of your thinking in later years. Thinking, broadly speaking, is dependent upon verbal and non-verbal language for its unfolding; the greater your experience and knowledge in the use of language, the more you should advance and control the highest development of your thought processes.

Thinking and the body. Thinking, of whatever degree of control, is evidently accompanied by certain bodily reactions in the form of articulation or other muscular activity, tensions, and visceral reactions.

It is a common expression to say people talk more than they think. As social behavior demands, the child ceases talking so much and is able gradually to inhibit frequent speech that usually followed his thinking. In later maturity, however, there is a return of frequent speech as one often talks to himself. Sometimes this speech is not preceded by useful thinking, but may be necessary for the progress of thoughts. Discussions among college students, business men, professors, and great thinkers may be the expression of previous thinking but often they are merely "thinking aloud" at the time. Theories you study are reports of thinking through the printed word. When you face critical situations in life, it is necessary to think constructively and consider the possible outcome to yourself and those about you. Much of this thinking develops and matures by talking with others. The person who reiterates the ideas of others without making these ideas his own, has learned

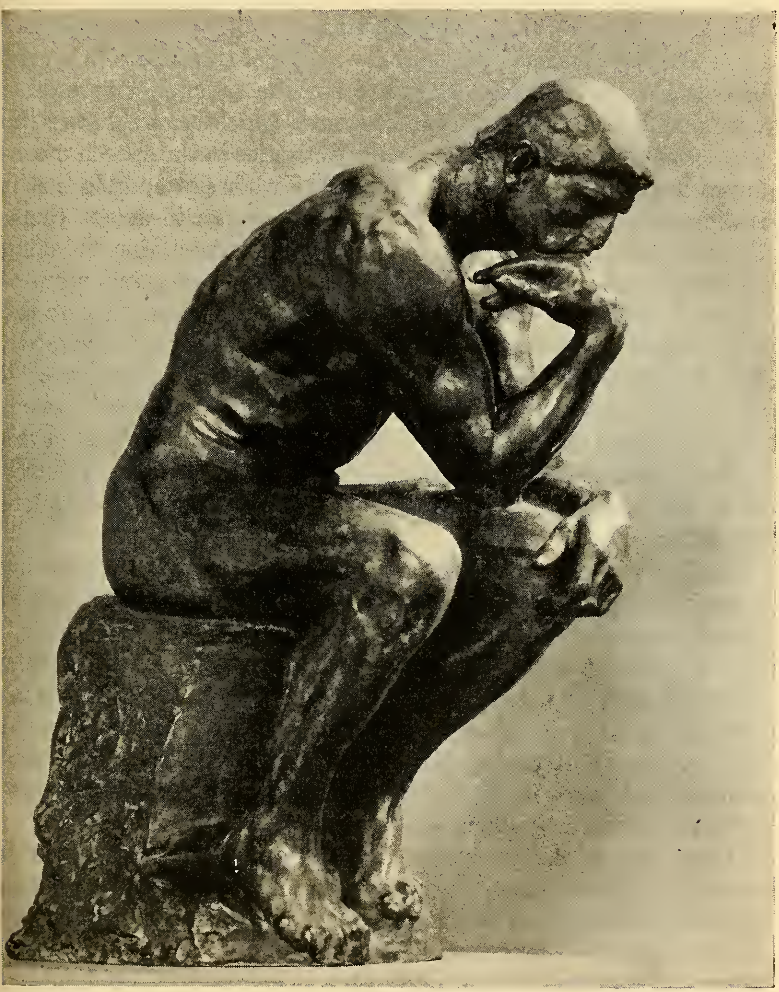

FIG. 9. "The Thinker," by Rodin, illustrating a certain muscular set in thinking. Courtesy of The Metropolitan Museum of Art.

something but probably has thought little. One learns to discriminate between the learner and the thinker. They both may have an unusual memory and display a mastery of verbal expression but as one writer expresses it, "an educated man gets his thinks from someone else, but an intelligent man works his own thinks."

To what extent is speech activity a part of thinking? From the laboratory, we find that whether or not one articulates in audible words there is an implicit form of speech which occurs during the process of thinking. These muscular activities in the speech mechanism are usually so reduced in intensity when not audible that it is difficult to devise instruments delicate enough to detect them. Thorsen (1925) found that tongue movements during thinking occurred more readily under distraction and certain speed requirements, but they do not occur with thought at all times, nor do the same tongue movements accompany the same thoughts repeated. Eye movements may also accompany thoughts as demonstrated when one is asked to think of a bird flying across the field, or an airplane lifting off the runway. Jacobson (1929) discovered in the development of his technique for progressive relaxation, referred to in Chapter IX, that thinking seemed to stop with complete relaxation.

Various muscular attitudes and bodily tensions observed during intensive thinking are characteristic of the attentive attitude and of the thinking posture. The bodily posture of Rodin's "Thinker," Fig. 9, on page 123, suggests a muscular "set" during thinking although such an objective pose may not be universal. Other investigators have found an increase in respiratory rate and in the rate of the pulse during thinking. Changes in circulation and reduced resistance in the body generally are reported to have resulted from thought processes.

Purposive thinking requires a great deal of energy which is supplied by the brain and nervous system. Theoretical knowledge regarding the relation of thought processes to the central nervous system is yet too problematical to aid us in the better use of mental energy in reducing mental and physical fatigue to a minimum.

Group thinking. Much of our thinking is done while we are members of more or less organized groups. The interplay of thoughts within the group influences not only the thinking of each member, but it may produce composite thoughts much more important than the aggregate of thoughts contributed by individual members. Some investigators postulate a group mind to do this composite thinking, but this assumption has little foundation. The individual minds in the group may merge their thinking into a common pattern, but that does not produce a group mind.

Someone usually is responsible for the pattern of group thinking. It may be someone able to formulate his thinking in such effective language that he informally becomes the leader to set the pattern. Thinking in a group is dependent upon more than intellectual factors. Clear thinking becomes difficult when suggestions and cues are provided by varied stimuli from other members of the group. The individual should understand these influences so that he may control his thinking more effectively.

CONTROL OF THINKING

Varieties of thinking. Thinking which occurs in dreams, phantasies, reveries, and imagination is characterized by its inconsistencies, by its lack of conscious control and order, and by no evidence of goal or purpose. Thoughts which are unconsciously controlled as in night-dreaming may be effective in recognizable ways on awaking. For example, certain persons have awakened with the solution of a puzzling problem, or a decision to undertake a certain business venture. Mearns (1925) cites an example in his records of creative expression of youthful poets.

> My sincere praise did not seem to affect her, which was not strange because she, above others of her age, was gifted with poise and control. But she was moved finally to say, by my warmth possibly, "It seems not my own . . . and yet I know it is all of me. It was written in the night after I had awakened suddenly; it was written rapidly and without consideration; then I went swiftly to sleep. There was no change to be made in the morning. I cannot get over the strangeness of it" (p. 90).

Creative expression may emerge from day-dreaming as well as night-dreaming. Thinking during day-dreaming and reveries serves a purpose in adjustment when day-dreaming is limited and under self-control. This imaginative thinking which often frees or relaxes one from routine tasks may provide one with vicarious experiences of being a hero or heroine, or permit one to build "air castles," revel in the thoughts of a new home, an electric dishwasher, or a longed-for journey. One never knows when an idea, which may come in imaginative thinking, will be the germ of productive thinking of the higher kind.

The unconsciously controlled thought patterns may not be confined to dreams, reveries, and imagination, but may occur as well in habitual thinking during routine activities. Much thinking necessary to perform routine tasks in daily living has become automatic and habitual, it has passed from conscious control to unconscious control. Habitual thinking during a day's work usually progresses in a definitely set pattern. When once thinking in certain forms has become a habit, it is very difficult to bring that habitual thinking back into conscious control. Breadth of experience and need for frequent decisions stimulate repetition of many thought processes. The frequency of repetition of similar thought processes soon makes them habitual. Thought patterns which have passed from conscious control to unconscious control prove to be definite determiners in the longer thought processes of reasoning and creative imagination. The greater one's experiences in the higher forms of consciously controlled thinking, the higher the level of habitual thinking. There is economy in building up serviceable habits of thinking which provide a certain emancipation for greater thinking.

The highest forms of consciously controlled thinking are experienced in difficult reasoning, scientific research, inventions, and creative thinking of all kinds. These varieties of thinking are described as *reflective thinking*, *real thinking*, *effective thinking*, *purposive thinking*, and *creative thinking*. They represent an integration of the ideas and imagery of thought processes in which relevancy of materials and direction toward a purpose or goal are found.

Creative thinking in its simpler forms is not so rare as it may seem to you. It is much more a part of your everyday life than is recognized. Some phase of creative thinking and imagination often prompts a new use of an old tool, or the addition of a new part to make its use more comfortable. Creative expression is found in new combinations of ingredients in cooking, or in making a dress or hat of your own design. The same tools and same materials which are useful in constructive thinking may be used in creative thinking. When the output or combination is not a copy or imitation of other things, but a product of your own, whether it be a thought, a poem, a piece of lace—if it is an expression of yourself and of something that means you—it is the result of creative thinking. Just as in other varieties of thinking, creative thinking may consist of shorter thought patterns as well as longer thought patterns. The higher expressions of creative thinking experienced in business planning, in scientific research, in inventions, and in the living products of the artist are usually processes of thinking over a long period of time in which there is a great measure of unconsciously controlled thinking, such as imagination. In such creative thinking you free yourself from old habitual patterns, you seem to discover new elements hidden within you, you are mastered by an all-pervading purpose that surmounts all obstructions to the final expression of this passion within you.

Creative thinking is based on rich experiences. If your experiential knowledge is similar to that of another person, you may find that your creative thinking produces similar results, although you do not know and may be far removed from this other person. An example from the past century is that of William James in the United States and Langé in Europe, each of whom produced a theory of emotions so similar that it has since been known as the James-Langé theory, which is discussed in the chapter on "Emotions." Today, this creation of similar thought patterns by people working independently in widely separated places may be facilitated by more rapid communication and increased means of publication, but earlier illustrations are readily found when news traveled slowly.

An active imagination in creative thinking can create personalities that become so real one forgets they ever were imaginary. The products of Mark Twain's fertile mind and productive imagination are represented pictorially in the proposed memorial to him shown in Fig. 10 on page 128. These now famous characters are as living persons to hundreds who know them. Other great writers, whose books live and pulsate, report that they are in control of their general ideas, but that the characters in their books seem to carry the story along from step to step.

An important factor in creative thinking is the sudden discovery of a new combination or integration of parts, referred to as a hunch, an insight, or intuitive judgment. These sudden acts often seem dramatic and advance the thinking process toward its goal. Such an experience brings the product of unconsciously controlled forces in imagination into conscious control. It is often the fulfillment resulting from persistence to reach a satisfactory adjustment in experience.

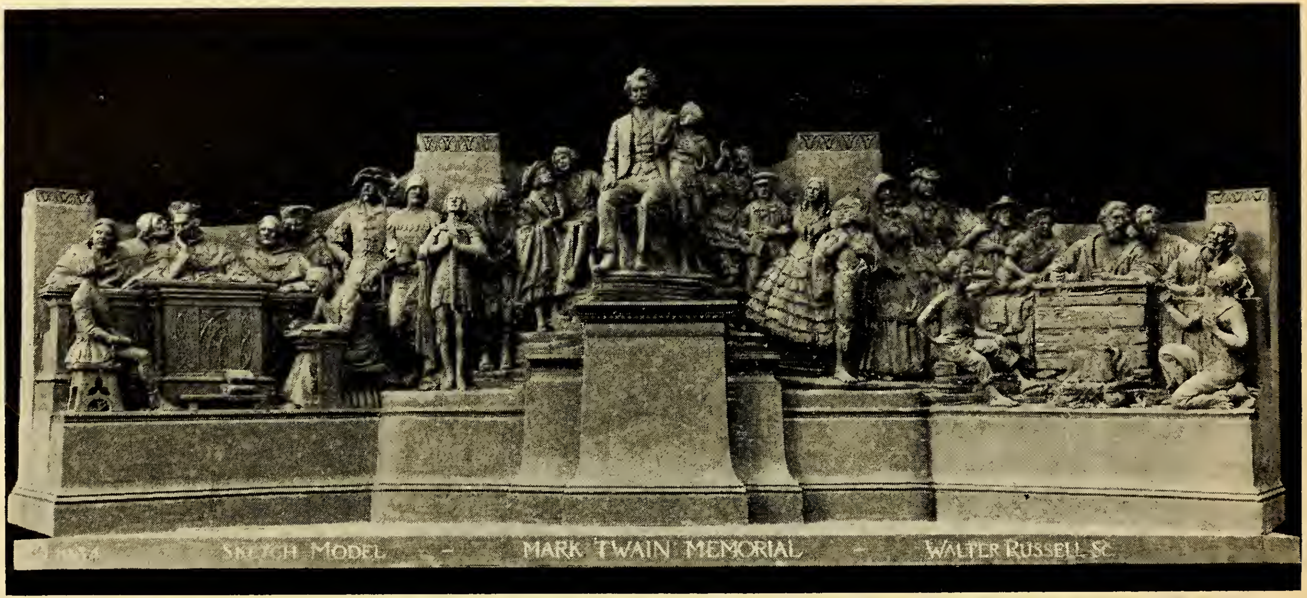

FIG. 10. The products of Mark Twain's creative mind designed by Walter Russell for a proposed memorial. Published in *The New York Times*, April 20, 1935. Reproduced by permission of Mr. Russell.

Creative thinking which culminates in some goal or finished product has certain characteristics, some of which are: (1) its dependence upon the mood, patience, and persistence of the creator; (2) its unconsciously controlled phases in which memories and ideas seem vague; (3) its possession of the creator's attention, the activity becomes all absorbing; (4) unfailing motivation arising from emotional conflicts and urges; (5) its freedom from scheduled and planned direction; (6) occurrence of hunches and sudden recognition of useful techniques; (7) need for reserve energy and the best health; (8) favorable environment conducive to uninterrupted thought.

Phases of purposive thinking. Many attempts have been made by authorities to elaborate the various stages of the thought processes in purposive thinking, in reasoning, and creative thought. We *think* we know some of these phases in the higher forms of thinking, but we are not sure of their sequence and overlapping, especially in those longer thought patterns in which a definite beginning and culmination of thought patterns are identified. First of all, there must be a beginning in purposive thinking which leads to a completed task, the solution of a problem, or an artistic creation. This beginning is perhaps the greatest obstacle to constructive and creative thought of any kind. Any situation which provokes thought may be the starting point, but recognition of the task does not necessarily begin the thought process. The beginning of thought must include urge for the goal, or genuine need for decision. Unless there is this urge to think, this need for solving the problem or desire for satisfaction, there will be no thinking. Uncertainty, hesitancy, doubt, self-justification, difficulty, all of these factors contribute to the beginning of thought patterns. Many people never get beyond recognition of the problem. Unless the problem concerns them in some personal way it may never motivate thinking. All our thought revolves about ourselves, directly or indirectly.

When once the thinking process is activated, the next step is thought to be the collection of facts and data which will advance thinking in the desired direction. Knowledge is sought from books and the experiences of others. Facts are organized into serviceable thought patterns. Adequate command of language, both nonverbal and verbal, is necessary to define the meaning of these facts and experiences. Classification follows accumulation of these facts.

At every advance in the progress of thinking discrimination and criticism in the selection of relevant data, and the exclusion of irrelevant data, occur. Such criticism and discrimination, guided by judgment, are dependent upon the purpose for which the problem is to be solved. Here one encounters habits of thinking that unconsciously may aid or hinder the progress of thought. In order to inhibit that habitual thinking which is not helpful, one needs to bring these thought patterns into conscious control. When once certain types of thinking become habitual, they also become natural, they seem comfortable and right. If they are to be inhibited, it is necessary to judge them according to their help or hindrance in the progress of this particular task of thinking, and not on the basis of their function in previous problems and adjustments. This task may be one of the greatest stumbling blocks in reasoning.

As one discriminates, selects, and criticizes data in each step of advance in thinking, he not only must keep the problem in mind but also the end to be attained. Purposive thinking does not consist entirely of successive thoughts in a forward sequence. It is characterized by an overlapping of the various steps in the advance of thought; previously organized thought patterns become integrated with the newly organized thought patterns in an associative spread which may extend forward, backward, or in any direction. The greater the problem and the more difficult its solution, the more one needs to suspend judgment while integration takes place between earlier and later advances in thinking. This higher form of consciously controlled thinking differs from simpler thought processes, such as the simpler sequence of ideas involved in planning, in that each succeeding advance in thought involves a more intricate integration of thought patterns. The goal is constantly kept in mind from the beginning, and each advance in thought is directed in its relation to every other phase in the thought process as well as the problem as a whole.

The formulation of tentative conclusions is made during these phases of the thinking process, and the successful thinker is checking his progress with repeated verification of his facts and reasoning. He is familiar with the knowledge of others in his field, whether he is an inventor, scientist, or artist. He does not hesitate to doubt and question his own ideas. His effort is sustained throughout, questioning increases as delay and difficulty are experienced in reaching his objective, and judgment is delayed until satisfactory solution is found.

A problem has been solved, a difficulty met, or a task completed when one has either satisfied himself with the answer, made the necessary decision, relieved himself of some trouble, evolved a new scientific principle, or created something that expresses himself. The end of long thought patterns which extend over a period of time and deal with intricate problems is not only the determination of a solution, a decision, or an answer; it extends to the application and generalization of the solution not only to the one who thought it through but to his fellow men as well.

Hermann Helmholtz, the great German physicist, was asked on his seventieth birthday how his thoughts came to him. In generalized terms he referred to a first stage of preparation in the development of his thoughts in which the problem was investigated from all directions, and to another stage of incubation in which accumulation of data became assimilated; there were times when the mind was not actively controlling the problem. A third stage, often referred to as illumination, arose whenever sudden thought patterns, insights, or happy ideas emerged.

The conscious use of these various stages in the thinking process will aid your own thinking and lead to effective use of sound and reliable thought patterns.

Some characteristics of effective thinking. To experience higher forms of consciously controlled thinking, such as reasoning and creative thinking, will power and patience are essential, will power to carry through a gruelling task, and patience to await the outcome. It is just this will power and patience which often separate a would-be creator from the artist or inventor.

Sound thinking which results in values beyond the thinker is characterized by a dominating, directing, or determining tendency which holds him to his task until satisfaction is realized in some form. There is a compellingness present. The extent to which this dominating tendency may possess one is evident in an absent-minded person; or it may be observed in social conversation when a topic has been dropped, yet one member of the group persists in talking about it; it is extreme in the development of great principles, scientific laws, and creative art. It holds the mind of a Newton over and above all other activities. When Newton was asked the question, "How did you discover the law of gravitation," his answer was, "By thinking about it all the time." This compellingness is described as concentration. Concentration increases as higher levels of controlled thinking are attained.

Clearness and consistency so characteristic of effective thinking are obtained through facility in the use of terminology, which, in turn, implies control of one's linguistic environment. This means that the thinker has a good vocabulary and is acquainted with facts bearing upon his problem. He is in command of essential technique for productive thought. Many individuals may have ideas but lack words or other necessary tools to express those ideas.

The effective thinker succeeds in overcoming obstructions in the process of his thinking by avoiding false assumptions and freeing himself from emotional prejudice. Intellectual honesty and emotional balance are essential for sound thinking.

The attitude of the productive thinker is a questioning one. He is ready for contradictions, willing to accept relevant ideas, and is never content that he has reached ultimate knowledge when once his task is completed.

The great thinker has had continued practice in formulating serviceable thought patterns under guidance of his sensitive judgment and critical insight into the heart of the problem. The more one thinks, the more one becomes adapted to thinking.

How to control thinking. To what extent thinking may be controlled is a question. No doubt most of what we call thinking goes on more or less as an undirected flow of ideas and pictures, partly determined by sensations and impressions flowing in through sense organs and by activity or work in hand at the moment. The general direction of ideas to be dealt with may be controlled, no doubt, to a greater or lesser extent merely by the effort to think about certain ideas, even though there are marginal ideas and images at the moment which are uncontrolled. As a matter of practical experience, the following suggestions for controlling one's thinking processes may be made helpful.

(1) Ask yourself questions, as many questions as you can possibly think of, about the thing or objective at hand, about what you wish to think, about the problem you wish to solve. For example, in endeavoring to write this chapter, I thought of: What is thinking anyway? What good is thinking in our lives? And since this is meant to be a useful book, how can thinking be con-

trolled? How can you make yourself a better thinker? How can you solve problems better?

(2) Do not be too fussy; in fact, it is probably well not to be fussy at all as to how to start thinking about a subject. Do not say to yourself, "This idea is not good, that idea won't hold, someone will think that is foolish." The minute you become fussy about how you are going to think, and whether ideas that occur to you are pertinent, your inhibitions set in and you are stopped. It is only by having a lot of ideas and questions that you will arrive at good ones. Rather, go right ahead. Let ideas come as they may. Then, after you have quite a flow of thoughts, reexamine them and sift them.

(3) Acquire wide varieties of ideas and experiences through reading and observation. Evaluate them as you observe and read and try to interpret them in relation to what you are reading and observing. Your thinking processes will be enriched and effective on new problems, particularly to the extent to which your effort to think about new problems will automatically stir up ideas in your mind, whether they are related or not. Such other ideas will depend very largely on the richness of your past life, and the extent to which you have assimilated and interpreted your past experiences.

(4) Push yourself when you are trying to think. Try to think of as many things as you can. Out of a thousand ideas, sift a few good ones. Edison made thousands of experiments with thousands of different materials before he found a suitable filament to invent the incandescent lamp. Creative thinking is very much like that. You can do creative thinking mostly by pushing. A humorist suggested that when Columbus started out, he did not know where he was going. When he got there, he did not know where he was. When he came back, he did not know where he had been. However that may be, he did know when he came back that he had been in some new place, that he had discovered a new country, and that he never would have gotten there without pushing. You may be very uncertain about your thinking, but unless you push you won't do very much new thinking.

(5) Go where there are no distractions. Shut the door. Be alone. Put yourself in a leisurely frame of mind, free from the urgent things that press upon you. Many persons are able to do their best creative thinking early in the morning, when they wake

up, or after relaxation, when their mind has been free, when they can see things in new relations, and when the flow of ideas goes on uninterrupted.

(6) Sift the medley of ideas and check and counter-check them, after you have had a considerable accumulation, with other ideas and experiences of your own and of others, try to evaluate them. The degree to which you winnow all the good ones, and usually the good ones are the ones that will work in a practical world, to that extent you are applying common sense. That probably is the essence of common sense.

Exceptional powers of mental calculation have been reported which illustrate a high degree of control over thinking and retention. Ball (1928) cites several calculating prodigies, of whom George Parker Bidder, born in England in 1806, is an outstanding example of complex achievement. Ball writes that

> He is perhaps the most interesting of these prodigies because he subsequently received a liberal education, retained his calculating powers, and in later life analyzed and explained the methods he had invented and used. . . .
>
> In 1816, being then ten years old, just learning to write, but unable to form figures, he answered questions such as the following: . . . If a coach-wheel is 5 feet 10 inches in circumference, how many times will it revolve in running 800,000,000 miles? Answer, 724,114,285,704 times and 20 inches remaining, given in 50 seconds. What is the square root of 119,550,669,121? Answer, 345,761, given in 30 seconds. . . .
>
> Bidder did not visualize a number like 984 in symbols, but thought of it in a concrete way as so many units which could be arranged in 24 groups of 41 each . . . he relied largely on the auditory sense to enable him to recollect numbers. . . .
>
> Other members of the Bidder family have also shown exceptional powers of a similar kind as well as extraordinary memories. . . .
>
> It is probable that the majority of calculating prodigies rely on the speech muscles as well as on the eye and the ear to help them to recollect the figures with which they are dealing. . . .
>
> Probably *constant practice* and *undivided devotion to mental calculation* are essentials to the maintenance of the power, and this may explain why a general education has so often proved destructive to it. The performances of these calculators are remarkable, but, in the light of Bidder's analysis, are not more than might be expected occasionally from lads of exceptional abilities (pp. 271–291).

The need for real thinking. When once you have known, felt, or experienced higher forms of consciously controlled thinking, you will experience a new power within you, a freedom from servile subjection to everyday habits, a lifting out of mundane routine of existing; you dare to venture in quest of the whys and wherefores of the urges within you; you are in control of your own abilities as you have never been before. These experiences enrich life. They bring an expansiveness and feeling of general well-being.

There is joy in real thinking in spite of the hard work it may require to reach a decision, or attain some desire. There is satisfaction in mastering a difficult problem, in maintaining your position among competitors, in feeling power and superiority over your immediate environment.

Many unknown principles and facts in the world are yet to be discovered and elaborated. The development of radio has opened a mine of ideas. Its possibilities are inconceivable and no one can predict its future development. We know so little about the common cold and its prevention or cure, yet medical science is making great advances. Thinking is known to have improved the life of man and enabled him to control forces within himself and those in nature, yet there is an abundance of problems in our educational, social, and economic life that have not been actively approached by great thinkers.

Bentley (1934) refers to thinking as a new resource which frees the organism from the natural panorama and order of nature, permitting it to deal with matters far removed from scene and sound; the gain lies not only in disengaging the organism from the flow of natural events as perceived, it lies also in the creation of functional by-products which have extraordinary uses for man.

The training received through productive thinking permits you to advance into higher vocational levels. Oliver Wendell Holmes has written that the "thinker controls the future." Medicine, law, government, forces of nature, and forces within yourself, need the sound thinker for their advancement and useful control.

Starch (1934) suggests that purposive thinking of a dozen persons may provide controls whose influence may be exerted among millions of people of the nation. One person may conceive a certain improvement in learning to read through which millions of children may learn to read more efficiently and become better citizens. He thinks that every business should have connected with its top management one person whose function it should be to think through the problems of the business from a long-range point of view, to create new ideas, new projects, new things to do.

It is impossible to tell anyone specifically how to think, or train one in thinking. Your own need to meet some urge or satisfy some desire will start thinking processes. When once this power is generated within yourself, study its motivation and progress in the light of the suggestions in this chapter. Each effort to think will improve your thinking and increase your courage to carry through the laborious but thrilling process when once it is started. The more you succeed in thinking effectively, the more you will control yourself in better adjustment to your environment and the more able you will become to control the behavior of others.

Questions for Yourself:

1. Describe an experience of your own in which short thought patterns were used. Recall your first recognition of your own ability to think.
2. What is the highest level of consciously controlled thinking you have experienced? Describe this experience.
3. What situations, knowledge, or persons have stimulated your thinking?
4. Select the suggestions in this chapter which will help you to think and make your thinking more useful. How can you adapt them to your own use?

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CHAPTER VII

REMEMBERING

Remembering is an active process and a phase of learning exceedingly important for enrichment of our experiences. When we remember events or scenes we behave as though we were again witnessing or experiencing them. We remember names, words, dates; we remember how to swim, how to play tennis; we remember a story, a poem; we remember these things because we have learned these facts, skills, and thoughts at some time.

Is remembering, then, memory? There is slight differentiation between remembering and memory. Memory is remembering anything previously learned which is reproduced in terms of language, such as the memory of facts, ideas, events. The associations which build up memories are verbal associations. When a child remembers something and remarks, "I want to tell daddy," then the process of memory takes place. In learning skills such as typing or skating, the motor habits are usually learned to such a degree that they are often remembered during a summer's vacation or from one winter to the next. We do not think of these skills used in the performance of these acts as memory, but we do think of them as having been remembered. Suppose in the reënactment of these skills you told someone of their principles, or of your improvement in speed or perfection of certain strokes. Then memory enters in.

Our behavior as a result of remembering means that we have gone through successive processes in which we have not only learned or *acquired information*, but we have either *retained* it or *forgotten* it; we not only have retained much of what we learned, but we were able to *recall* and *reproduce* some of it; we not only could recall certain facts and experiences, but we were able to *recognize* many of them as having been experienced before. Therefore the study of this exceedingly useful ability—to remember—will be considered in its four phases as the control of learning for remembering; the control of retention and forgetting; the control of recall or reproduction; and the control of recognition.

CONTROL OF LEARNING FOR REMEMBERING

As we form new habits and build upon the old, learning continues into a highly complex social act very much under our control through childhood, youth, college days, and middle life. But in later maturity our ability to learn does not seem so active; incentives are less interesting; habits are well established and it is more comfortable to use the old habits than it is to organize new ones.

Chronological age and remembering. The ability to remember increases steadily up to adulthood as learning advances. Adults excel children in higher types of learning and likewise they excel in memories of meaningful materials and ideational retention. The acceleration and decline in learning as one grows older is illustrated by Thorndike's (1928) curve of learning, Fig. 11, referred to in Chapter V. This increase in the function of remembering into adulthood may be due to various factors, such as better habits of attending and observing, more efficient organization of simple habits into complex, or more familiarity with the materials used in learning and thinking.

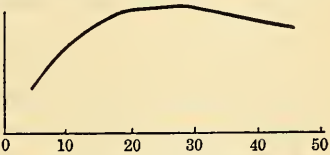

FIG. 11. The general form of the curve of ability to learn in relation to age. From E. L. Thorndike, 1928, p. 127.

Miles (1933) has presented a sound psychology of maturity based on scientific principles found to have many practical applications. His studies of the relation between age and human ability are based upon a variety of tests of persons in age groups beginning with youth from 10 to 17 years of age, up to and including adults from 70 to 89 years of age. The fact that old people forget is proverbial. He suggests that the measure of relative strength of memory and forgetfulness may tell us who is old. He finds that decline of immediate memory is relatively rapid. In later maturity the decline is more marked the more complex and difficult the material is to be remembered. A certain amount of control of learning may last throughout life, but when mental deterioration becomes extreme in the aged, there is a decline referred to as "senile dementia," in which all control of learning is gone.

Martin (1930), herself a living demonstration of learning ability in later years, has studied the possibility of salvaging old age. She discovered much more learning ability among old people than had been recognized. Even though older persons cannot acquire new information so readily, they retain, recall, and recognize many facts, scenes, and feelings they learned in earlier days. The reasons for remembering certain experiences and forgetting others are not yet fully known.

Little is known of the scientific principles underlying retention from childhood, through maturity, and to old age. Yet we know of definite recall of childhood experiences by older people. E. B. Titchener (1923) tells us of a poem, "The Morning of Christ's Nativity," which he learned when eight years old and recited at the age of sixty with few promptings. H. C. Warren tells us of his father who, when he received an invitation to his fiftieth college reunion, began reciting his senior oration, and found he remembered it with few errors. These examples suggest the great persistence of some impressions on the neural tracts and at the same time the apparent loss of other impressions.

Factors in serviceable remembering. Learning and remembering are inseparable, but from an experimental point of view the process of remembering is studied as though it followed the process of acquisition, the first phase in learning. Our primary concern in this chapter is to study that phase of learning which functions in time, designated as remembering, but since the manner of acquiring new information is such an important factor in serviceable remembering, some topics in Chapter V will be reviewed and supplemented here. The attitude of the learner should be an active one with intent and determination to remember. Recognize effective incentives for learning which aid retention and then use them. Be prepared not only for immediate recall but delayed recall as well.

The methods referred to in Chapter V, and supplemented here for their value in retention, are distributed and massed practice, whole and part learning, self-recitation, and the association of ideas.

The method of distributed practice for learning has been found superior to concentrated or massed effort, as you will recall, for many materials and purposes in learning, but this fact cannot be applied too rigidly. Concentrated or massed effort has often proved better for more complex learning. Learning for longer retention or delayed recall, however, is usually more efficient with distributed practice than massed practice. The best spacing of intervals between practicing periods for most memory material has been found to be from twelve to forty-eight hours. When rest intervals occur between successive learning periods in the process of memorizing, it is better to have the intervals short at first and increasingly longer toward the last.

The method of learning new material as a whole, rather than in parts, is considered superior, as you will recall, for much retention, especially for memorizing nonsense syllables, lists of words, poetry, and prose. But in longer tasks of learning meaningful material part learning has the advantage; it would be folly not to spend more time on more difficult parts to remember. In general there is economy in learning for retention if you train yourself gradually to use the whole method in learning. The meaning of material is more easily grasped and more accurately produced by working with the whole method most of the time.

The method of self-recitation referred to in Chapter V is more effective for retention beyond immediate recall than the customary method of reading and re-reading passages. Reciting to yourself, anticipating questions, answering them, and prompting yourself activates reasoning, strengthens thinking, and greatly increases retention. The superiority of the new method of self-recitation over the old method of re-reading for recall immediately and retention after four hours is shown in the following table:

RECITATION VERSUS RE-READING[1]

MATERIAL STUDIED	16 NONSENSE SYLLABLES PER CENT REMEMBERED		5 BIOGRAPHIES—TOTAL OF 170 WORDS PER CENT REMEMBERED	
	Immediately	After 4 Hours	Immediately	After 4 Hours
All the time devoted to reading	35	15	35	16
1/5 of the time devoted to recitation	50	26	37	19
2/5 of the time devoted to recitation	54	28	41	25
3/5 of the time devoted to recitation	57	37	42	26
4/5 of the time devoted to recitation	74	48	42	26

The greater the amount of time devoted to self-recitation, the greater the percentage of material remembered. This evidence should encourage one to adopt the more active form of learning and the more effective study habits resulting from self-recitation.

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[1] From Gates, 1933, p. 349.

Control of retention may be increased by recognizing the value of applying rules of learning which strengthen association of ideas throughout the learning process. Satisfying and pleasing after-effects, as we learned, strengthen the learning process and favor retention. Meaningful material is more easily memorized than nonsense syllables for the reason that more serviceable associations between ideas can be made for later recall. Over-learning, or the use of many repetitions with the essential "belongingness," is conducive to better retention. Behavior patterns developed in performance of skills are usually retained well because they are usually over-learned. The emotional content of learning material is often advantageous for retention and enables the learner to recall more vividly in many situations. In any event, all your ingenuity will be taxed to make and control the associations of ideas that will assure reliable recall.

Control of Retention and Forgetting

How familiar it sounds to hear someone say, "Where is the key?"; "Where did I put my fountain pen?"; "Isn't it funny I can't remember where I left my glasses?" We know that any article easily lost can be found best if it is put in the same place each time after it is used. But suppose you inadvertently put your glasses in an unusual place, and you do not recognize the change in place at the time, the moment it would have taken you to recognize and fix in mind the change in place may become hours of searching if the glasses cannot be found readily. Remembering where you put things which are necessary for any day's schedule is one of the most essential aids in the conduct of your daily life. We all forget, however. How to control that which we need to remember at a particular time, and forget that which is not necessary in our lives, are intriguing questions. Too often we reverse the process, we remember the trivial and forget the essentials. The student who forgets a fact necessary in an examination; the politician who cannot remember a man's name at a strategic moment; the actor who suddenly forgets his lines; the lawyer who forgot an important paper for court; these and many other practical experiences occur so frequently and for all of us regardless of age, intelligence, or personality, that it is absolutely necessary to train ourselves to retain essential facts for dependable recall at crucial moments.

Individual differences in retention. Individuals differ greatly in their ability to retain. These differences are due in part to innate powers of retention and are similar to individual differences in learning. The use of principles which improve memory is not an increase in original power of retention, but an increase in the skill with which this power is used. James expressed his conviction long ago that no amount of culture would seem capable of modifying a man's general retentiveness. Native retentive power is not under our control, but the use which is to be made of this potentiality is within our control. We may not only control the retention of isolated details, but control the retention of hundreds of details associated into great memories of past experiences, which contribute untold enrichment or indescribable misery to our daily lives. We would welcome forgetting the misery but unfortunately the ability to forget operates for delightful and pleasant experiences as well. Be alert for suggestions to control retention and forgetting so as to facilitate happier adaptation to the forces about you.

Retention in children. The length of time over which retention is measured varies from less than one-half hour to four hours, to several days, and in a few cases, to several years. Impressions are easily made in childhood activities; but whether or not they are retained depends in great measure upon the child's interests. Children learn so much unintentionally through play activities. The experiences colored with fears, restriction, embarrassment, punishment, and other emotional associations may be retained for an unbelievedly long time.

We shall refer to two of the few experimental studies of children's memories. Burtt (1932) tells us of an experiment with a very young child where retention was studied in an objective manner. He read twenty-line selections from Sophocles' *Œdipus Tyrannus* in the original Greek to a child between the ages of fifteen to eighteen months. Three such selections were read daily; three more were read between the ages of eighteen and twenty-one months; and so on until the child was the age of eight and one-half years. Then one section from each age level was learned by a modified prompting method. At the same time three other similar selections, that had not been presented in infancy, were learned. The three new selections required 435 repetitions to be recited without prompting, while seven of those presented in infancy required an average of 317 repetitions. In general, those selections presented at a later period in infancy were relearned more readily than the new. Although the infant did not intentionally learn the selections, impressions were made which facilitated the memorization of these lines later.

Holaday and Stoddard (1933) in their study of how children get ideas from the movies investigated their ability to retain information from talking pictures. Nearly 3,000 children from the second to the tenth grades were matched for school grade, intelligence, and reading ability. The day after seeing each of six talking pictures they answered a number of items, of the five-response type, referring to the picture; they again were tested for the amount of information retained one and one-half months later and again three months later. There is very little difference between first recall and the third recall after three months, practically no loss in ability to reproduce the actual content of the pictures according to the information elicited by the inquiries. The youngest children retained 52 per cent the next day and 48 per cent over three months. Retention for all children is high. The fact that for all these children there was no test between learning and recall to reinforce their retention of any information, is an important one in the interpretation of studies of retention. If practice intervenes between learning and recall, the interpretation of conclusions is complicated.

Curve of retention. The curve of retention which has been erroneously referred to as the curve of forgetting in numerous textbooks gives an idea of many factors which affect one's ability to retain memorized material. The classic experiment carried out by Hermann Ebbinghaus in 1880 developed the first data for retention over a period of time. His accurate technique and control of many variable factors have been a model and guide for hundreds of psychological experimenters since his time. Ebbinghaus used nonsense syllables, a vowel between two consonants, to avoid the many associations through experience which known words would have. The experiment was conducted by him and on himself. All sources of error were checked and evaluated with an accuracy which was commensurate with experimental studies in older sciences of the physical world.

In the experiment Ebbinghaus read through several series of nonsense syllables completely from beginning to end, reading and reciting at a constant rate set by a metronome striking 150 times a minute. An accent on every third or fourth syllable was inevitable and proved helpful. Objective conditions in his own life were controlled so as not to permit great irregularities during the experiment. Each series was learned until it could be recited accurately in two successive recitations, in other words it was barely learned. After the learning of each list the measure of retention was made by the savings method in which the number of trials necessary to relearn a list is compared with the number of trials necessary to memorize it at first. The trials for relearning are always less and represent a certain amount of saving to the learner.

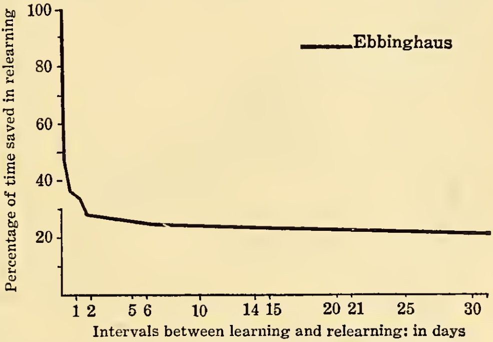

FIG. 12. The Ebbinghaus curve of retention. Plotted from data in the translation by H. A. Ruger and C. E. Bussenius, 1913, p. 76.

The percentage of time saved or of retention as seen in the curve, Fig. 12, decreased rapidly at first, in about twenty minutes it dropped to about 58 per cent, with a more gradual drop during later periods. This sudden drop in retention is thought due to the loss of that phase of the material which was least learned. Many other studies since Ebbinghaus' time have verified this type of negatively accelerated curve shown in the figure.

Curves of retention for certain school and college subjects have been found by Pressey (1933) to resemble the curve of retention for nonsense syllables. The curves drop more rapidly at first and then taper off gradually, as seen in Fig. 13. The retests for retention were of course given only to those students who continued in their courses; the poor students who left would not be included in the tests following those at the end of the courses. The mastery at the end of these courses varied from 64 to 78 per cent. After sixteen and twenty-eight months there was retention varying from 16 to 48 per cent. Since the greatest amount of forgetting occurs soon after learning, it is very helpful to review learned material early. A profitable suggestion is to review class work briefly the next day after it is learned.

Characteristics of the material and degree of learning. The rate of forgetting is not constant. Meaningful material is more slowly forgotten than unmeaningful material, such as nonsense syllables. Nonsense material barely learned is almost lost in four months but poetry barely learned has been known to be retained after twenty months. Material which is over-learned is more slowly forgotten than material which is learned only to the point where it can be barely reproduced without error. The rate of forgetting verbal material is more rapid than non-verbal material, such as skills involving motor activity. Skills, however, are usually over-learned. The amount of retention for given periods of time is a function of the kind of material and the degree of learning.

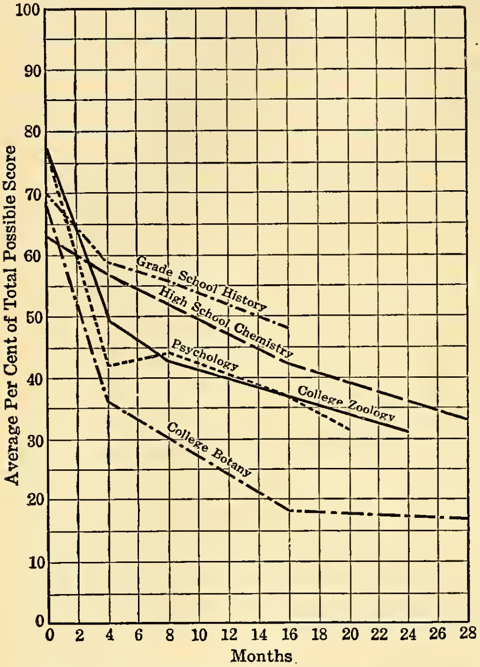

Fig. 13. Retention curves for one elementary school subject, one high-school subject, and three college subjects for 16 to 28 months after the end of the course. (After S. J. Bassett, E. B. Greene, S. R. Powers, and P. O. Johnson.) From S. L. Pressey, 1933, p. 400.

The type of material as well as the amount to be learned influences retention. Lyon (1917) found that college students retained words, prose, and poetry much better than digits and nonsense syllables. The digits and syllables without meaning would be learned more or less by rote, while the words, prose, and poetry with meaning would be learned more by associations that would not only favor retention but rapidity of memorizing as well. The relative effort necessary for memorizing varying degrees of meaningful material is shown in the analysis of Lyon's data for equivalent amounts of the various types of material as follows:

200 nonsense syllables were learned in 93 minutes
200 digits were learned in 85 minutes
200 words of poetry were learned in 10 minutes
200 words of prose were learned in 24 minutes
700 words of poetry were learned in 91 minutes

Ebbinghaus found an advantage in retention for longer lists of nonsense syllables; 33 per cent was retained for lists of twelve syllables, and 58 per cent retained for lists of thirty-six syllables.

Skills and retention. When we consider retention of skills, what do we find? Woodworth (1934) tells of a student who had practiced the typewriter for 200 hours and ceased typing for a year, but he was able to recover all lost ground in less than an hour of fresh practice. This represented over 99 per cent retention based on the time necessary for relearning. Other skills show remarkable conservation during times of disuse. In the ball-tossing experiment by Swift (1903, 1905, 1910) in which two balls were tossed with one hand, the average scores of ten trials a day for forty-two days were determined, followed by tests once a month for five months to measure retention. During an interim of one and one-third years, in which there had been no practice, a retest of the skill was given. In another four and one-fourth years there were a few days of relearning with the resulting acquisition curve shown in Fig. 14.

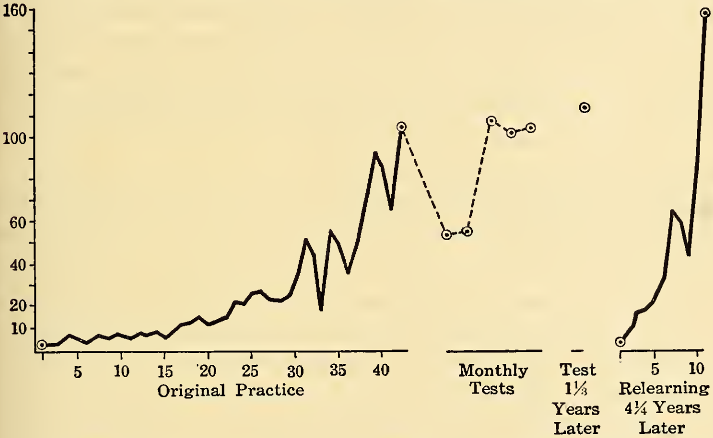

Fig. 14. Retention curve of practice effects in ball-tossing according to Swift over an extended period of time. From J. F. Dashiell, 1928, p. 364.

Skill acquired in playing tennis and the ability to play chess suffer little in an interim when there is no practice. William James expressed the retention of skills in a terse statement that we learn to skate in summer and swim in winter. The difference in retention of muscular skills and retention of verbal material may be due in great measure to the degree of learning. The exercise and pleasure found in tennis, skating, swimming, or chess, and the necessity to type, are inducements for a great amount of over-learning which increases retention.

Verbal learning when accompanied by muscular movements has been found to be retained more easily. There is some evidence that articulation aids memory. Barlow (1928) reports an experiment in which words, when whispered as they were read, were retained better than words read with a pencil held between the teeth. Many persons feel that they can remember better if they write the material or numbers, but unless facts to be remembered are given some associations or meaning for them at the time of writing, the writing in itself is not always helpful.

Influence of interpolated activities. The cause of forgetting has often been considered a function of time, but time in itself is not the chief factor. Intervening activities between time of the learning experience and time of recall are known to inhibit retention and thus cause forgetting. Time is often considered a "saving grace" in alleviating tension resulting from emotional experience, but time alone is not the most advantageous factor. Time filled with some definite activity will aid forgetting more quickly than time spent passively. Circumstances which force your mind to be absorbed in other things alleviate the effects of grief more readily than time itself, or change of scene and thought. Those who control themselves through intense grief and great catastrophes use the psychological technique which inhibits the intensities of memories.

A direct illustration of the effect of interpolated activities is the experiment in which you are asked to cross out the 2's and 5's on a sheet of paper which contains many rows of numbers. With practice at spaced intervals you are able to improve in this ability very rapidly, providing an interpolated activity between practices does not interfere. If you are given the task of crossing out 4's and 9's on another sheet between times, the practice with these new numbers interferes with your further concentration on 2's and 5's and lessens improvement. If you cross out words during the intervening time, there is less inhibition in your recognition of the 2's and 5's. If you rest in the time between practice trials, the inhibition is even less.

James' (1890) classic experiment is one in which he learned 158 lines of Victor Hugo's "Satyr" over a period of eight days, in an average time of 131.8 minutes. During thirty-eight days after, he spent 20 minutes a day memorizing the first book of Milton's "Paradise Lost." This was followed by another 158 lines from "Satyr." This time it took 151.5 minutes, or 20 minutes longer than before. The improvement that was expected did not occur, but some inhibition did occur. This inhibition is determined by the measurement of retention. There is a decrement in retention when one practices a sample of material and, between these practices, interpolates practice of another sample of similar material. The measured loss in retention due to an interpolated activity is referred to as *retroactive inhibition.*

When rest in the form of sleep intervenes between practice periods, there is much less forgetting. It is usually true that what you learn in the evening is remembered better in the morning than what you learn in the morning can be remembered at night. Activities of the day tend to disorganize associations and interfere with remembering. An inactive physiological state aids remembering. In the experiment of Jenkins and Dallenbach (1924), sleep intervals of one, two, four, and eight hours were compared with similar intervals of rest when awake. After the intervals of sleep more than twice as many nonsense syllables were remembered and the increases were in proportion to the longer sleeping intervals. They say in conclusion that, "The results of our study as a whole indicate that forgetting is not so much a matter of the decay of old impressions and associations as it is a matter of interference, inhibition, or obliteration of the old by the new."

Van Ormer (1932) also has found much less forgetting in the period spent in sleep than in an equal period of time awake. He studied the practice necessary to relearn material and found that the interpolated activity of sleep for intervals beyond an hour is superior for retention to that of being awake. The interpolated activity of resting when awake is more favorable for retention than other activities.

Lester (1932) experimented with a method to reduce retroactive inhibition which could be brought within the control of the learner. In his investigation there were three situations in which conditions were controlled. In one situation the learning problem was given to a subject who not only knew of the retroactive effect but was warned to avoid it; in another situation the subject knew about the effect, but made no effort to overcome it; in a third situation conditions were controlled in such a way that the subject knew nothing of the possibility of inhibition. When the subject knew and made an effort to avoid it, as in the first situation, the retroactive effect was greatly reduced. And so we find again that a person can control the degree of retention to great advantage if he has a certain "set" for the learning. There is a different attitude toward learning when it is necessary to prepare to resist influences.

The Freudian psychologists claim that we never actually forget anything, that we have a way in which we can repress those things we do not want to remember, but that they are always there to enter into later experiences, often in some mischievous or disguised form. They think all forgetting is intentional. Repression occurs in order to become unconscious of experiences that were unpleasant, that have conflicted with our attitudes, or that could not receive social approval. If these experiences are repressed, we are supposed to guard them zealously by a "censor" during our waking time, but during sleep they may come out in dreams in some symbolic form. Or they may express themselves when we are awake in deceptive forms such as nervousness, forgetfulness, fears, pains, headaches, stuttering, and so on.

To think that we can never forget anything seems an exaggerated statement and rather absurd. How could our nervous system carry the infinite number of details we ever learned? There has been no scientific evidence for these theories and we hesitate to think that we are unable to forget many things. Learning has been compared with energy, and forgetting with the dissipation of this energy, a means of maintaining equilibrium. If you find it difficult to forget an unpleasant experience, instead of repressing it in the hope that you will never think of it again, it is much better to face the facts, think them through, do what needs to be done, and work out the difficulty openly and above-board without concealing it. Then you will have adjusted to the experience, completed the task, and maintained self-control over the after-effects of the experience. When you are in control of remembering and forgetting, you usually remember necessary things and can depend upon the selectivity of your memories.

CONTROL OF RECALL OR REPRODUCTION

The ability to recall or reproduce past impressions is objective evidence of retention. In our discussion of retention we were constantly referring to recall; the two are parts of the same processes, but what we are able to recall is not an indicator of all that we are able to retain. This is illustrated when we have found ourselves unable to recall a name, face, design, or tune, but when again we heard that name or tune, saw the face or design, we immediately recognized them as familiar. Recognition, to be considered later in this chapter, is also an indicator of retention.

Recall may be immediate or delayed. Recall of most things learned occurs soon after the learning for most effective results. The longer the delay in recall the more we must be prepared for reliable reproduction. We have realized that learning material for immediate recall differs from learning material for delayed recall.

Recall dependent upon appropriate stimuli. There can be no recall without some kind of stimulus. We are unaware of many of the stimuli which cause a fleeting memory of a face, an odor, a book, a pain, a moment of pride or despair. They may come from our physical environment as an auto horn, the presence of a certain vase in the room, a gift handkerchief, a date on the calendar, or they may be socially stimulated by conversation and faces about us at a dinner table, or they may be due to organic and emotional stimuli within ourselves, from our own words or bodily posture. Just what your reaction will be to these various stimuli depends upon your attitude at the time. You are oblivious of many stimuli that would ordinarily evoke certain feelings or motor habits when you are intent upon the completion of a task, involved in an argument, or in great pain. If you wish to recall a specific thing, it is important to prepare yourself to be ready for response when appropriate stimuli come that will arouse the things you can remember.

Some of the large department stores in New York City have information booths on the first few floors in which a person is seated to answer thousands of questions coming from many customers crowding around the booth every moment. It can be estimated that the self-controlled informer responds to as many as

2,000 questions in a seven-hour day. This means that the informer not only retains an enormous list of details but is prepared and in "readiness" to recall each and every one at the moment the proper stimuli are presented. Persons who can discuss many topics from the folk dances of Sweden to the new discoveries about heavy water are prepared and ready to recall past impressions. We think of them as good conversationalists.

Factors which aid recall. There are several factors which definitely aid recall and enable you to control activity necessary to reproduce specific knowledge at a particular time. Many of these factors are functions of your own condition and attitude. You may have learned perfectly and have retained reliably but have no assurance of your ability to recall. We usually recall just what we are prepared to recall. For example, in memorizing paired words where we learn to recall the second word at the stimulus of the first word, which is a forward form of recall, it has been shown that to recall the first word of the pair at the stimulus of the second word is impossible unless it was known that this backward form of recall was to be desired. Or if we memorize material for delayed recall, and then are surprised by some distraction at the time of recall for which we were not prepared, such as an audience, recall is more difficult. For efficient and dependable control of memorized materials at the time of recall the learner must be alert to and informed of the use to be made of the material and the conditions which are to attend recall. If the conditions for recall are to be new and unknown, it is necessary to learn material for recall differently to avoid the possibility of forgetting.

The rôle of imagery in recall. Many individuals are aware of the service of imagery in recalling past experiences, such as visual imagery in seeing the sheet of music of the composition previously memorized; auditory imagery in hearing the sound of the voice of a loved one; kinesthetic imagery in feeling the right muscular tonus for hitting the golf ball; or gustatory imagery in tasting bitter medicine. The extent to which this reliving in imagery aids recall varies with different individuals. Francis Galton, in 1883, made a study of the tendency of some people to see things in memories of past experiences. Letters were sent to hundreds of people in all walks of life asking them questions about their recall of the breakfast table. Does the scene come back vividly to you? Do you see the whole scene at once? Are the objects distinct?

This information led to an evaluation of individual differences in memory images, ranging in value from those who experienced imagery as clear and vivid as the actual experience, to those who experienced no imagery at all, although they might be able to recall the scene verbally. And it was found that one person is not entirely eye-minded (visual imagery dominant), or ear-minded (auditory imagery dominant), but that most people are of mixed types. These mixed types of individuals might recall their experiences in one or more forms of imagery as visual, auditory, gustatory, tactual, or kinesthetic.

These memory images present in delayed recall vary from the primary memory images, in that the latter persist for a few moments after the object is examined in an absorbed manner. When primary memory images are literally seen, not merely imagined, in the absence of the original stimulus, and are unusually vivid and detailed, they have been called eidetic images. Individuals who see these eidetic images with such perceptual clearness have been referred to as eidetic individuals. This experience is more common among children than adults; it occurs in later childhood among children under 14 years of age and fades out in adolescence. The experience is entirely subjective, not confined to the visual sense alone, and more intense, as well as rich in detail, than images generally. Memory images in general occur later in life; they seem to occur less often for adults than children, and less often for those adults who do more abstract thinking than others.

Hallucinations differ from eidetic images in that the images in hallucinations are taken for the real object or scene and the eidetic images are recognized as memory images. Objective reality seems to disappear in one's wishes and fears, when fragmentary images of desired experiences occur as though they were real perceptions. Scenes in half sleep may seem as vivid as though they were real, but when one is entirely awake they are known to be imaginary and the perceptions false. In some forms of mental disorders in which individuals lose control of their imagery, hallucinations which are thought of as real experiences become extreme and more or less constant.

Another experience in imagery of normal persons is referred to as synesthesia. Definite images of one sensory quality arise when another sense organ has been stimulated. Certain colors may be associated with sounds, or numbers, such as bright red for the tone of a trombone, blue for the number six. Colored tastes and colored odors are also experienced by some individuals. These close associations between two sensory experiences occur in definite descriptive forms for some people, and are demonstrated by the color organ which, when played upon like an ordinary organ, displays varying lines of color for different tones. The principles underlying synesthesia are given practical application in the color organ for esthetic and entertainment purposes.

Similarity in stimulating conditions. Another factor which will help recall is similarity of conditions at the time of recall to those at the time of learning. Altered conditions at the time of recall often lack the necessary stimulation to elicit remembered facts. The man who learned the Chinese language while in China and tried to use it after a period of time in America found recall impossible. As soon as he returned to China, however, he easily regained his former facility in its use. Many things learned are forgotten for lack of adequate stimuli. Changes in stimulating conditions of a new environment, together with retroactive inhibition due to interpolating activities, are primary causes of forgetting. Oftentimes the slightest cue or part of a situation will be the beginning of an unfolding of detailed recall of an experience. The more identical, however, the stimulating conditions at the time of recall are to those at the time of learning, the greater will be your control over recall. Smith and Guthrie (1921) gave an experiment to students in which they learned and relearned lists of ten nonsense syllables under four different conditions: (1) learning and relearning both occurred in the laboratory; (2) learning occurred in the laboratory and relearning outdoors; (3) learning outdoors and relearning in the laboratory; (4) learning and relearning both outdoors. The relearning which occurred in similar surroundings to the learning required an average of 11.4 per cent fewer repetitions.

Burri (1931) studied the effect of changed conditions at the time of recall by having the subjects in the experiment recall lists of nonsense syllables under two conditions, with an audience and without. The audience proved inhibitive in the majority of cases.

The affective tone of learned material is a definite factor in heightening the efficiency of recall, but results of experimental studies are yet in disagreement as to the general principles underlying the effect of emotional contexts. It has been demonstrated that learning accompanied by both pleasant and unpleasant associations takes place so quickly and often is retained so long that none of the fundamental laws of learning, except the law of effect, seem to operate in the process. It has been thought that pleasant material is remembered better than either the unpleasant or neutral. But experiments have disclosed both pleasant and unpleasant material to be retained better than the neutral. Some experimenters claim there is little difference in all three types. Gordon's (1925) experiments with 300 students in recalling odors found that 49 per cent of the pleasant odors were recalled, 50 per cent of the unpleasant, and 56 per cent of the indifferent odors.

Washburn (1923) and her students have conducted a long series of studies regarding affective tone of learned material for purposes of remembering. In one experiment 90 students recalled occasions when they were angry, afraid, joyful, and the joyful occasions were more often and more intensely revived. From experimental illustrations we can conclude that affective tone of learned material does favor better recall. A great deal depends, however, on the temperamental dispositions of the learners generally, as well as the emotional associations present at the time of learning. These variables are difficult to control in experiments.

The effect of reward and punishment in learning has been investigated for both animals and human subjects by Thorndike (1933) and his coworkers in a great many experiments. The reward for learning varied from food for the hungry rat or chick, to an assurance of "right," or success, or some form of approbation for the human subject. Punishment varied from an electric shock or no food for the animal, to an assurance of "wrong," or failure, or lack of promotion, and so on, for the human. It has been demonstrated that satisfying after-effects are conducive to better learning and lessen relearning.

Thorndike (1935) is a leading exponent of the theory that rewards act backwards to strengthen the connection between the stimulus and the learned response. In one experiment, a list of 40 words was prepared in which the experimenter paired each word with one of the numbers from 1 to 10. The experimenter read the words through rapidly to the subject, speaking the words only and not the paired numbers. The subject was asked to give a number from 1 to 10 as each word was heard. If his response was the number assigned to that word he was rewarded by being told

"Right," otherwise he was punished by being told "Wrong" without being told the right number for the word. Both the rewarded and punished responses were repeated, but the former occurred more often. Thorndike (1935) reports in regard to the practical applications of his various experiments that

> In all these experiments, useful learning occurs almost or quite exclusively by the strengthening of certain connections by satisfying after-effects. Indeed, wrong choices on the whole do more harm by occurring than punishing them repairs (p. 74).

> The effective fact is in all cases the magnitude of the satisfaction the learner has, not that of the reward we give . . . , and moderate rewards attached to all desirable connections are actually superior to large rewards given less uniformly. Thus, four occurrences all followed by the minimum reward that will set off the confirming reaction are enormously more effective than one occurrence with the reward four times as great.
>
> The value of any experience or activity—value for knowledge, skill, character, or any other quality or ability—depends upon what the after-effects of its various parts are and especially upon which of its tendencies have satisfying after-effects. Mere neutral repetition is a wasteful form of education. The effective provision of experiences must consider the learner's wants and make desirable parts of his activity satisfying (p. 145).

Unfavorable factors for recall. Difficulties in recall occur when recall is incomplete and inaccurate, when memories are repressed, and when there is a natural lessening of learning and remembering as one grows older. Fortunate is the person who has never known behavior resulting from inability to recall the next part of a piano solo in performance or the complete answer to an examination question. The disturbance, tension, and embarrassment of stage fright when singing a song or delivering a lecture or appearing before a judge, and other similar experiences, are known by many.

Interference in recall, such as temporary inability to state the full name of a street where an accident occurred in which you were involved, will usually disappear after conflicting emotional stimuli are removed. If recall does not come readily, wait until the conflicting stimuli subside, then recall may be definite and accurate. Anxiety and self-consciousness often prevent complete recall; impressive facts may remain, but unimpressive ones are gone.

Partial recalls are known to persist when one is busy with other things. A tune often persists in one's mind, or a familiar face is seen, or a line of poetry repeated over and over again. These partial recalls which persist without evidence of appropriate stimuli are said to perseverate. Activities which are recalled in perseveration are often those from interrupted tasks. For example, if you are relating an incident to a group where numerous interferences stop you before you reach an important point referring to a particular person, this point may persist in your mind and continue after you leave the group.

The errors in recall have been experimentally studied especially from the point of view of testimony. No one seems to be absolutely accurate in recall, the average man less so than the trained reporter. Many reports are unreliable because they are mere hearsay, but even eyewitnesses of scenes and events are unable to agree on what occurred. The courts are at the mercy of these discrepancies, often made by the most intelligent and honest eyewitnesses. The accuracy of reports depends not only upon persons who are reporting, but upon material reported and circumstances at the time of the event and at the time of recall. Stern's experiments on testimony referred to in the next chapter reveal information about inaccurate recall, as well as inadequate observation and apperception.

The complete inability to recall or loss of memory is known as amnesia. It may be only temporary forgetfulness, or a repression of memories for an indefinite time. When amnesia is due to an accident, or a shock of some kind, it may consist not only of the loss of recall for all impressions attending the accident or shock, but for those impressions as well which occurred for a period of time before the shock. The condition of amnesia may occur in the daily life of normal persons when they experience a temporary siege of hysteria, a high fever, the results of intoxication, or toxic poisoning which may last for months. When health is restored, they recall nothing of the worries and disturbances their behavior exhibited during the time. In shell-shocked soldiers amnesia is complete; no impressions are ever recalled of the events immediately preceding, during, and subsequent to the shock.

The repression of memories may interfere with habitual behavior to the extent that you find yourself behaving peculiarly. If something is disturbing or distressing you and you are unable to identify it, it is often necessary to seek the aid of a reliable psychologist or psychiatrist. Persistent annoying behavior in adults often can be traced to the presence of some childhood experience that has been submerged and forgotten but is the cause of strange feelings and uncomfortable experiences. Bagby (1922) reports a case of phobia in which circumstances were revealed without professional aid that caused the disturbing behavior.

> A man suffered from a phobia of being grasped from behind, the disturbance appearing early in childhood and persisting to his fifty-fifth year. When walking on the street he was under a compulsion to look back over his shoulder at intervals to see if he was closely followed. In social gatherings he arranged to have his chair against the wall. It was impossible for him to enter crowded places or to attend the theater. In his fifty-fifth year he returned to the town in which he had spent his childhood. After inspecting his old home, he went to the corner grocery and found that his old boyhood friend was still behind the counter. He introduced himself and they began to reminisce. Finally, the grocer said this, "I want to tell you something that occurred when you were a boy. You used to go by this store on errands, and when you passed you often took a handful of peanuts from the stand in front. One day I saw you coming and hid behind a barrel. Just as you put your hand in the pile of peanuts, I jumped out and grabbed you from behind. You screamed and fell fainting on the sidewalk." The episode was remembered, and the phobia, after a period of readjustment, disappeared (p. 17).

Many compulsions in everyday experiences are mild in nature and not disturbing. When they persist and increase in intensity so that they are socially and individually a hindrance in normal activity, there is one way to eradicate the compulsive behavior, identify the forgotten memory of the experience which was the cause. The great difficulty is to produce the appropriate stimuli of the learned experience necessary to arouse the memory of that event. When once the man, reported by Bagby, remembered the boyhood stunt and was told of the grabbing from behind which caused him to faint, he was able to relieve himself of the fear and unnecessary protection which had become a fixed habit. Among the various devices employed for the recall of past impressions are crystal gazing, automatic writing, and hypnosis. These mechanisms are used for the purpose of counteracting inhibitions and relaxing the individual, so that various stimuli in the nature of questions or suggestions will release the repressed memory.

Control of Recognition

Recognition, a phase of recalling, gives evidence of retention beyond that which recall can give. Recall is reproduction in some form of past impressions, while recognition is that feeling of being acquainted with some past impressions. You may not be able to recall the name of a former acquaintance but you may feel sure of recognizing the name if you hear it. Much more is recognized than recalled. Recognition is another form of measuring retention.

The method of recognition used in studies to measure retention consists in the identification of familiar materials intermingled with unfamiliar materials. From this simple and direct form of testing retention through recognition, more complex procedures have developed, in which the material to be recognized is ideational, involving meaning and reasoning. English (1934) and others give an example of this more complex procedure. College students were tested for their recognition retention of a passage of difficult prose. There were two test forms applied; one required the reproduction almost verbatim of portions of the text, the other required recognition of the meaning of the text when it was couched in different words. The verbatim items showed a curve similar to that of Ebbinghaus, while the non-verbatim items were not forgotten over periods up to 70 days. Recognition from both forms of procedure was far better after 24 hours than it was immediately. The investigators suggest that substance memorization differs not only from the learning of nonsense syllables but also from logical learning in which the words of the original text are preserved.

Difficulties in recognition. Recognition is often in error. The control of recognition is dependent upon your assurance of past impressions. When past impressions are wrong you are, unfortunately, as sure of the wrong impressions as you would be of the right. The errors so easily made in recognition are too often ignored in the identification of a suspect. Reliable recognition will occur more often when the suspect is one of several persons lined up for inspection than if he is presented alone for identification. The influence of suggestion in the latter situation cannot be avoided.

Incomplete recognition of many things and thoughts in our activities during a day is a baffling experience. Attempts to "place a person," to locate a familiar tune, to recognize a voice on the telephone are very complex acts. The old habitual patterns do not function readily or completely when recognition is incomplete. The few stimuli, inadequate for complete recognition, need to be reinforced by memories of the actions and personality of the person, the rhythm or words of the tune, the inflection or quality of the voice before recognition is possible.

Characteristics of stimuli necessary to assure recognition have received little scientific consideration. The minimum number of stimuli, their intensities, frequencies, readiness of the person to receive them, and many other factors are a part of recognition behavior. Several persons have attempted to analyze the reason for the arduous daily shopping tours in which they search for some definite article but cannot find just the right one. Finally the selection is sudden, with the remark, "That's just what I have been looking for." There is some characteristic or quality in the selected article which is similar to old habitual patterns associated with and conditioned by former experiences. The characteristic cannot be recalled to facilitate selection but it is recognized when once it appears.

Paramnesia takes place whenever the situation you are in seems familiar, although actually it is a new and strange situation which you have not experienced before. Enough identical elements in the new situation are present to remind you of a past scene or environment. If paramnesia occurs, the stimuli from the new scene or event must include enough of those stimuli in previous scenes to be sufficient cues for the whole experience. This feeling of familiarity in new environments is usual behavior for normal people. The feeling of strangeness in familiar environments may occur occasionally but not often, as a rule, unless an abnormal condition sets in. Disorders in recognition which are indicative of abnormal conditions often are observable in behavior when appropriate stimuli do not arouse recognition of the face of an old friend, or past impressions of objects about you.

You can control the reorganization of constantly changing habits for more reliable and efficient recognition by the understanding and use of principles already brought forth, the principles which underlie economical learning, more serviceable retention, better recall and recognition.

How to Remember

The reader can easily summarize the numerous facts and principles which have been suggested to improve ability in remembering what one needs to remember. Do not attempt to remember too much. Permit a generous amount of forgetting for healthy adjustment to your environment. Select the materials you wish to retain, organize them well, and over-learn them for reproduction when conditions of recall are unknown. In order to improve one's memory, it is necessary to improve the method of learning.

The process of learning, acquiring new habitual patterns, is amenable to the greatest amount of improvement. Native retentive ability which you have inherited can be used to a greater extent than you are aware of until you have participated in a memory training experiment. There are many systems of training one's ability to remember. A professor who remembers the names of former students and can speak the name immediately at the sight of the student does not have a phenomenal memory. He has trained himself to be able to do this. A good politician has the names of his friends and enemies at his "tongue's tip." A hostess has practiced, on repeated occasions, the act of introducing many of her guests until she has implicit trust in her memory for names.

How is it done? By a few simple rules. When you want to remember a name, associate it with the mannerisms or knowledge about that person in any way you can, recall the association in various ways and on every occasion possible. A professor has frequent opportunity to say the name subvocally and vocally when conversing with the student during courses. The politician takes especial caution to get the name of a person when first introduced to him. He may repeat the name ten or twelve times in a moment's exchange of words or he may associate the name with an occupation if it should be Smith, Taylor, Baker, and so forth. One very sure way of remembering a name of a person when being introduced for the first time is to look at the person when his name is spoken, be sure to get the name clearly, then repeat it often, even to the point of shouting it, if social usage does not forbid. A certain merchandising manager who attends to countless details which must not be forgotten writes these items down in a pocket-size loose-leaf notebook. This notebook is carried in his inner coat pocket during the day and in his pajama pocket at night. Others are known to place this notebook on a bedside table at night with a pencil and light near by.

There are two respects in which Dr. Starch wishes his memory were better, or rather two kinds of things he wishes he would remember better.

> (1) New words and phrases for use in my own speaking and writing vocabulary—variety and novelty of appropriate and expressive words and phrases are a great asset. They not only express your thoughts better but impress others. Your power to influence others is greatly enhanced by your command of language, and acquisition of that is largely a matter of memory of useful words and phrases.
>
> (2) The second type of material that I wish I would remember better is interesting things I read. I wish so because it is one of the best means of carrying on an interesting, enjoyable, and profitable conversation with others whom you meet in business, socially, or at home. Carrying on interesting conversation is valuable because again it is one of the best and subtle ways of influencing others and of impressing others—it is a most desirable development of your personality and that is very valuable in all sorts of human relations. The person who can talk well and interestingly has a great power at his command, which is a great value in a business way as well as in a broad social way. It is a powerful extension of your personality.
>
> What do I do to remember these two types of material? I often make notes of them on pocket notepaper or, and especially, do I make mental note of them. When I strike a word or phrase I wish to retain for my own use, I stop in my reading and mentally impress it on my mind or write it down. If I want to retain anything I have read for future use in conversation or otherwise, I stop to reiterate mentally what I am reading so as to fix the essential items in my mind. My advice to others is, if you want to be sure to remember anything write it down—that is what I do—I am never without paper and pencil in my pocket. If I come across facts I want to use, I make note of them or of where I can find them.

Fernberger (1934) demonstrates a memory scheme before his psychology classes each year. The students write down any list they choose to make of thirty common nouns. The assistant, who does not have an especially good memory, comes blindfolded into the room and listens to each word of the list pronounced in order with a few seconds after each word. Immediately after hearing the list of words he can tell not only the position in the list of any word the students mention but he can name the specific words when they ask for the fifth, seventeenth, ninth, and so on. The students themselves find this very difficult, but any of them could soon acquire the skill in doing it by concentrated and organized practice. The assistant has done this for many years without fail. This is the system: He has a list of thirty key words which he uses from time to time. He has memorized this key list by overlearning, knows the words so well his memory never fails him. When a word in the student's list is presented, he recalls it by the association he made with his key word in his own list during the few seconds after he heard each new word. For example, the tenth word of the student's list might be "car" and his tenth word "elephant"; he immediately thinks of the elephant in a trolley car. You will be surprised how much you can improve your own ability to remember if you are willing to spend the time and energy the improvement requires.

There are many commercial systems of memory training referred to as mnemonics from the Greek, "mnemonikas," the science of artificial memory. Psychologists have been disgusted with many of these systems because the claims are so extravagant and the work given you to do is so out of proportion to the benefit you get out of it. The ability to learn any kind of material comes from systematic practice devoted to the particular material to be memorized, and it is idle to practice memorizing which is foreign to the special purpose you want to accomplish. The gain from these complex organized systems is not so much the intricate devices employed but the interest, zeal, and effort you put into them—yes, and no doubt the money they cost. If you profited from a $15 course, you expect to gain much more from a $25 course! There is no reason why sound memory training systems cannot be worked out for different kinds of memory materials based upon scientific principles. Such schemes would extend your control of learning for serviceable retention beyond objective facts and into higher forms of meaningful material and substance memorization.

Questions for Yourself:

1. What are the things you do not remember that you should remember? What are the respects in which your memory is deficient or in which its shortcomings may annoy you?
2. In what ways would you like to improve your remembering? Rather, what sorts of material or things would you like to remember better?
3. How do you now try to improve your remembering?
4. As a result of studying this chapter, what other ways of improving your remembering could you use?

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CHAPTER VIII

HOW TO CONCENTRATE FOR WORK

Inability to attend to the job at hand seems to predominate as a cause of inadequacy and failure in both education and business. There are various ways in which this inability is expressed by the worker. "I can't keep my mind on the job." "I simply cannot settle down to work." "What can I do to help myself concentrate?"

Almost everyone has found it difficult at times to concentrate for work. He has been unable to control himself or to control the conditions about him as conflicting forces within himself and distractions from outside have gained the upper hand. For success in the struggle for achievement it is exceedingly important that you control many of these internal and external forces, the more the better. In this chapter we shall consider the factors which interfere with concentrated attention for work, and inspect some of those principles which underlie accurate perception and observation, and effective attention.

Perception and Attention

You have given meanings to everything you have observed in your learning experience and the awareness of things about you. Many complex impressions have been interpreted immediately by you in the light of your previous learning and of your attitude at the time of responding to these impressions. This meaning which you have given to each sensation, word, sign, thought, and to their various combinations has been the process of perception. Since the organism cannot respond at any one time to all the stimuli present, it is necessary for it to select those stimuli to which it will respond. This activity of selection emphasizes certain impressions and excludes others. The impressions selected are by the act of selection attended to or given attention. Attention then is the preparation for perception of those stimuli which dominate behavior.

Simple form of perception. C. Lloyd Morgan (1930) refers to the responses of the chick as an illustration of a simple form of perception. A chick behaves in a certain way at first and on a few subsequent occasions, then his behavior changes. He will peck at anything, within certain limits of size, that is central in the visual pattern and affords adequate stimulation such as the glass-headed knob of a small steel pin, perhaps a ladybird beetle, or a bead of water, or a rice grain. He sees, pecks, seizes, tastes, swallows, or ejects. If it be a grain of boiled rice it is promptly swallowed, and this behavior becomes prescribed just as the pecking behavior. If it is a ladybird beetle and the taste is different—nasty as we should say—the prescribed behavior does not become one of swallowing but of ejection, and quite violent ejection. Later behavior toward objects in which the previous experience brought ejection brings rejection at sight. There is no more pecking or seizing. The chick may be said to have a foretaste. Our interpretation of previous experiences facilitates habitual behavior as well, in which first sensory impressions, such as tasting, hearing, touching, or sensing through the muscles, tendons, and joints are sufficient cues in later experiences to produce satisfactory responses.

Formation of a concept. Within the field of stimuli perceived there is always a center of vividness or clearness and a marginal area which is not so vivid or clear. The sense organs which are responsible for the selection of impressions coöperate with the motor mechanism in such a way that you may perceive size, shape, direction, motion, weight, and time. You also perceive beauty and honesty. Certain traits and characteristics at one time perceived in a particular situation become abstracted from that first situation so that their meaning is applicable to other situations. When a child learns that her father is called a man, it is some time before she realizes that the word "man" applies to persons other than her father When she can separate the idea of "man" from her first perception (which implies meaning) of this word with the word "father," she abstracts the meaning to apply to other situations and events. The isolation or abstraction of a characteristic or quality from its first association and its generalized application to other situations is the formation of a concept. In order to form concepts, experience needs to be verbalized. This naturally involves the higher integrated processes of reasoning and thinking. Therefore, percepts can develop from very simple and direct associations into a complex and complicated group of associations in which the original meaning was merely the beginning of an elaborate process of acquiring new knowledge.

There are great differences among individuals in their perceptions. Many meanings given by any one person to an object, word, expression, or sign are functions of that individual's past experiences in all the adjustments made with his environment. This is especially illustrated in the highly developed perceptions of a scientist, an artist, or a teataster. The botanist's ability to analyze a new plant, the bacteriologist's perception of a new germ, the painter's fine observation of color, and the expert's discrimination in tasting and selecting grades of tea are suggestive of the extent to which perceptions vary for different persons.

Control of perceptions. Attention is so persistently interwoven with the process of perception that it is impossible to separate the two. What we perceive depends upon the selection by the organism of those impressions which are brought to the attention. Therefore extent of perception and much of its accuracy are limited to our powers of attention and observation. Control of attention then would mean the control of perception and in turn the control of all perceptual-motor experiences derived from learning. There are two important facts to keep in mind. The first is that various sensations are not responded to as separate elements in perception but as a unitary whole through a coöperative integration of both the sensory and motor mechanisms. The other fact is that of redintegration in which, according to Hollingworth, one or more cues of the previous experience in which perception took place are sufficient to call forth a response similar to that which occurred when all the stimuli were present. This was illustrated by the several stimuli which produced the running activity for the bus cited in Chapter III, any one of which, even though it be in a different combination, may evoke a similar response at a later time. The absent cues for the new perception may be filled in by memory images, but it is quite possible that reduced cues can "set off" a meaningful response without any definite identification of the cues.

Habits of meaningful response are formed readily and serve to regulate behavior. The prediction of human behavior could be more accurate if the perceptual patterns which produce the various types of behavior were better known. Psychology is advancing in the development of scientific technique necessary to predict new behavior from knowledge of past behavior, but progress is slow. Such psychological technique will enable you to control your own behavior and that of others in a more proficient manner.

Perception of distance. The visual perception of objects in space involves distance and is determined by several factors. One is the relative position of the objects. Those which can be seen in detail and complete are perceived in front of those which seem hazy and incomplete. The relative size of objects also aids perception of distance. A second factor is that of linear perspective in which the edges of a concrete highway or the rails of a track seem to converge to a point in the distance. This visual experience of distance is also enhanced by relative size and clearness of objects bordering the highway. A third factor is the relative movement of objects when the observer moves the head from side to side while the eyes continue to look forward. If the head is moved thus, nearer objects seem to move in the opposite direction to the turn of the head, and distant objects seem to move with the head. This apparent movement of stationary objects with the change in position of the observer is technically called parallax. Its importance in determining distance is demonstrated when one moves at a constant rate in autos, trains, or airplanes. Objects in the visual field seem to move at different rates, those near by move fast, those at a middle distance less fast, and the hills in the distance have little or no motion.

The constant relation between stimuli and retinal image. The readiness with which sensory impressions and motor responses coöperate for satisfactory behavior is shown in Stratton's experiment (1897). He wished to know how we perceive objects right side up. You will recall that normally the image of an object seen is reversed on the retina from its position as perceived out in front of you. This position of the object, when it looks right side up, has a definite relation to the retinal image. Can the sensorimotor systems adjust to a situation in which the retinal image is reversed so that the object will again be seen in its normal position? Stratton tested this by bandaging one eye and fitting the other with a prism lens which reversed the position of the retinal image. He lived this way for eight successive days after a preliminary experience of three days. At first the objects were not only upside down but they were reversed in horizontal position as well. At the end of eight days, however, an adjustment had occurred visually, auditorially, and tactually; objects were localized in their normal positions and seemed right side up. It is not so much a matter of the position of the retinal image as it is a constant relation between the retinal image and the position of the object perceived. When the lens was removed, there was a new adjustment necessary to bring back the sensorimotor coördination which existed previous to the experiment. This experiment is an excellent illustration of the plasticity and adaptation of the nervous system to a complex situation and encourages confidence in control of new adaptations. Everyone has experienced the adaptation necessary for reversal of directions in dressing before a mirror. Later experiments by Ewert (1930) were made under laboratory conditions which failed to corroborate fully the results of Stratton, but the conditions of the experiment were enough different to account for the lack of agreement in results.

Meaningful organization facilitates perception. A foreign language cannot be interpreted until the elements and forms of words suggest meaning. It takes training to learn signs used in shorthand to convey standardized meanings, but soon response to them becomes automatic. These signs become parts of an organized system of meaning. As an illustration suppose we take the word

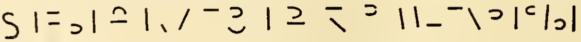
STRATOSPHERE

which stimulates some interpretation on your part. The word gains more meaning as you become interested in the new knowledge about it from the recent ascents into that region. Now look at the same letters arranged in this order:

OPRATSEHRETS

Does this assembly of letters have any meaning to you? Probably not, because such a combination of letters has not come within your experience, nor has it been given any interpretation in behavioral responses. At present we do not know of such a word.

This unmeaningful combination of letters can be further disintegrated and presented in the form of the elements below which



suggest a succession of hieroglyphics difficult to perceive at once. The organized pattern of the meaningful word could be reproduced after a glance. Compare the two for ease and accuracy of perception. Reverse this whole procedure and begin with the elements of letters presented above, which were signs or symbols without meaning, organize them into letters, and arrange the sequence of letters into a word to which you have given some meaning. The word becomes a perceptual pattern when it means something to you and immediately comes within your control. As a first step, in your own perceptual learning the whole is grasped and given meaning without reference to the parts. This whole is not interpreted as the sum of the parts but as a unitary impression, a "togetherness" as the Gestalt psychologists call it. Invariably analysis follows as a second step in which the parts are identified, followed by a third step of integration, in which the pattern of meaning has become your own.

Perceptions are often integrated and "click" into place, so that a succession of words may suddenly mean an invitation to the theater. Just as you have been conditioned to the sound of words to convey certain meanings, you can become conditioned to the sound of letters to convey meaning. Guthrie (1935) illustrates perception conditioned by sounds in the example of a conversation between a prospective diner and waiter in the restaurant.

F—U—N—E—X?
S—V—F—X.
N—E—M?
S—V—F—M.
L—F—M—N—X.

You may find it necessary to read these letters aloud. Familiarity with the Milt Gross readings will speed the interpretation.

The tendency to interpret a whole from a reduced cue is often experienced in the visual response in reading. A new word which has some letters similar to a word you know will often be thought of as the familiar word. This is one of the reasons for errors in proofreading often referred to as proofreader's illusion. It takes only a part of the stimuli of a former situation to evoke the complete response which has been made previously. This tendency offers one of many hazards in accurate perception.

ILLUSIONS IN PERCEPTION

Illusions are perceptions in which there is misinterpretation of data. These seemingly inaccurate perceptions occur as normal habitual responses. Their part in our interpretation of the world about us often makes us interpret things as they seem and not as they are. Visual illusions are the most frequent in our experience, those of taste and smell are little known.

Simple illusions of direction and size are found in visual space perceptions. The vertical-horizontal illusion, Fig. 15, is illustrated by the two lines which are the same in length, but the vertical line appears longer. To control the effects of this inevitable illusion a very tall person should avoid clothes with vertical stripes that accentuate height; likewise, stout persons might well avoid horizontal stripes. An illusion of size is illustrated in Fig. 16, in which the filled and open intervals are the same length, but the filled intervals in space appear more extensive than the unfilled. Here a series of restricted eye movements is thought to cause an overestimation and the stretch of free movements to produce an underestimation. In the illusion, Fig. 17, the two horizontal lines are equal in length, but the direction of the arrow points causes the upper line to be underestimated and the lower line overestimated. Characteristic illusions, which must be recognized in perception, are thought by some investigators to be due to inadequacies or peculiarities of the sense organs. They are taken into account by architects and designers in the arts.

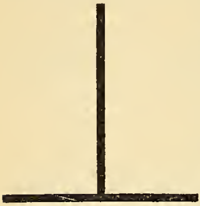


Fig. 15. The vertical-horizontal illusion.

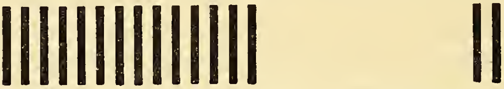


Fig. 16. The filled and unfilled interval illusion.

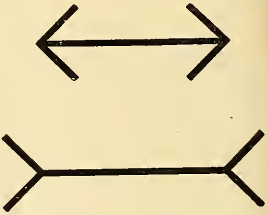


Fig. 17. The Müller-Lyer illusion.

Other perceptual misinterpretations in visual space are illustrated by the Poggendorf illusion, Fig. 18. Does the oblique line appear one continuous line? Similar distorted effects occur in the Zöllner illusion, Fig. 19, in which the vertical lines are really parallel. If you turn the book so that the long lines are neither vertical nor horizontal you see a variation of the illusion. And by sighting along the lines with the book at the level of your eyes, there is a suggestion of perspective. These typical errors in the interpretation of what is seen are in part due to eye movements and in part to the influence of objects near by.

An illusion of movement makes the motion picture possible. A series of non-moving stimuli successively exposed produces a succession of visual space perceptions at successive periods of time. The visual perceptions lag so that one follows the other as a continuous experience. It is a situation in which a succession of static photographs which vary slightly move across the visual field in such a way that they are perfectly synchronized with the visual perceptions of those in the audience. When these series of photographs are projected on the screen at the proper rate, which is about 24 a second, one perceives normal movement. The principle of this illusion is used also in the apparent motion observed in illuminated advertising signs.

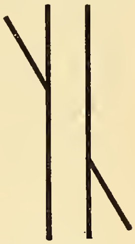


Fig. 18. The Poggendorf illusion.

Illusory perceptions involving other receptors with the visual occur in the size-weight illusion, a combination of the visual and kinesthetic perceptions. If two objects, one larger than the other, weigh the same, greater preparation is made to lift the larger box so that it seems to be lighter. Less preparation and effort made to lift the smaller box results in it seeming heavier. Perhaps this discrepancy in judgment has arisen from a previously established habit of expectancy. When you are ready and prepared to meet any situation from previous warning signs of the effort needed, you make that situation less of a task than it would be otherwise.

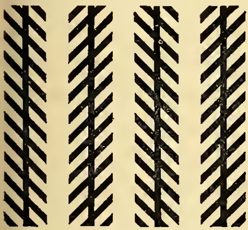


Fig. 19. The Zöllner illusion.

The influence of expectation is well illustrated in Brown's (1916) account of his laboratory studies of "suggestion." He told college students that he wished to measure the sensitivity of their various sense organs. They felt and reported the tingle in their fingers from the stimulation of an electric current. Then they were asked to try the test again. The "setting" suggested that the current was being turned on although there was no current flowing; a majority of the students again "felt" a similar stimulation. Likewise they were led to report warmth in an unheated box with a large electric light on top, tastes from tasteless distilled water, and odors from odorless liquids.

Physicians often are alert to reports of pain and disease which do not actually exist in the patient but seem to be there from suggestion. The preparatory set so responsive to suggestion is extreme in the insane person who hears himself called atrocious names each time he hears sounds. Knowledge of the tendency for these illusions of expectancy to occur will help one correct for it and improve in judgment. These misinterpreted perceptions are not present in all perceptual patterns and we must not forget the constancy and reliability of perceptual patterns which have become more or less standardized in experience. An infant is small, an adult large; lead is heavy, feathers are light; floors are horizontal, walls vertical; blood is red, coal is black, and so on. Constancy of perceptual response to various stimuli is often affected by the accuracy of habitual perceptual patterns associated with those stimuli.

Observation and Perception

Further discrepancies in perception are found in observation, especially in observations made during emotional excitement. The testimony of eyewitnesses to an accident bears evidence of great discrepancies which occur in one's interpretation of what was seen or heard. These inaccuracies are further multiplied by testimony of those reporting from hearsay; also by the lapse of time between the observation of the accident or crime and the recollection of what happened. Added to these further causes of errors is the influence of suggestion in the general setting at the time of the reports. How confused you become, how easy it is for you to lose control in reporting accurately what you saw or heard, especially when test questions imply facts that seem incompatible with your remembrance of the situation! Can you always believe your own eyes?

The reliability of testimony has been studied by Stern (1910) in an experiment consisting of three tests. In one test a picture was exposed for about one minute; in another an actual event was staged; in a third information was conveyed through the written words as a rumor test. Reports of what the observer saw, heard, and perceived were given in two forms; the form of a narrative in which the observer reported in his own words, and the form of deposition in which a series of specific questions was answered. The tests were rated for completeness and accuracy. In the narrative report sworn statements were found more accurate than unsworn statements. In the deposition report the greatest source of error was due to the nature of the question. For example, suppose there is an inquiry as to whether a man in the picture wore a hat. This question can be stated in four forms, as follows:

> Did the man wear a hat? (The determinative type of question.)
> Did or did not the man wear a hat? (The disjunctive type of question.)
> The man wore a hat, didn't he? (The expectative type.)
> What color was the man's hat? (The implicative type.)

The last question is the most confusing, the first one the least confusing. The average accuracy of trained reporters is about 75 per cent correct information. Eyewitnesses are considerably more accurate than hearsay witnesses. In either case, the emotional nature of the situation at the time of observation and at the time of report is a great source of error. If the control of an accurate report is subject to these inevitable sources of error for intelligent and educated individuals, think of the discrepancies which may occur in the report of the ignorant and uneducated. Testimony of a child or an uneducated person has been found to be beyond their control to such an extent that it is invalidated. An errorless report from even the most careful observer and accurate reporter is rare. The less imaginative person and the one with more mature judgment would be subject to less error.

In another experiment Brown (1934) used college students as witnesses to test reliability of identification testimony. A workman in the building was instructed to enter the classroom and tinker with the radiator. Sixteen days later this same workman and five others were lined up as "suspects" before the class. Of 117 students, 69 per cent identified the workman correctly. There were 17 students who did not witness the radiator incident, yet 5 of them recalled the happening and tried to identify the man. Since this experiment shows unreliability of such testimony under favorable conditions, Brown hesitates to hazard a guess as to how reliable it would be under actual police-station conditions.

Try testing your own reliability of direct observation by noting how many architectural details of buildings you pass each day have been observed; what were the items observed in a store wir dow to which you were recently attracted by a desired object; or what is the form of the four on your watch face, 4 or IIII or IV?

An illusion in nature which has been glorified in literature is the Great Stone Face in the mountains of New Hampshire. The suggestion that there is this huge profile of a face at the left side of a high cliff, and the expectancy with which you go there to see it, prepare you for seeing it vividly from the one vantage point. As you skirt the small lake which borders the cliff, the vision of the profile gradually disappears and from the other side of the cliff where the projecting edge is yet in view, there is no "face" at all. Apply this principle to your own perceptions and judgments in relation to others. From your point of view on one side of the cliff you may *see* the meaning very clearly but another person on the other side of the cliff may be *blind* to it. Thus inadequacy of perception and judgment often depend on one's position and point of view.

Reliability of observation can be greatly increased by rigid training over a prolonged period of time. The scientific observer has schooled himself persistently in observing accurately. He guards against anticipation of results which fulfill his desires and wishes. He disciplines himself to face facts in an unprejudiced, impersonal, open-minded manner. His accuracy of observation increases as he improves his ability to isolate the facts to be observed and to control all influencing factors.

WEBER'S LAW

The accuracy of perception, as measured nearly one hundred years ago by E. H. Weber in the University of Leipzig in his special studies of the muscle sense, is one of the great experiments in psychology selected by Garrett (1930). Small weights were "hefted" in the hand by lifting a standard weight and then another until the least perceptible difference between the standard and another weight could be discriminated. It was found that the average person could perceive the difference in weight between a standard of 100 grams and another weight of 110 grams. This difference was related to the standard as 1 to 10. If the standard weight was 200 grams, it was found that the other weight must be 220 grams which is 1/10 heavier than the standard for one to perceive the least possible difference. For a standard weight of 400 grams, the other weight needs to be 440 grams for perception of a

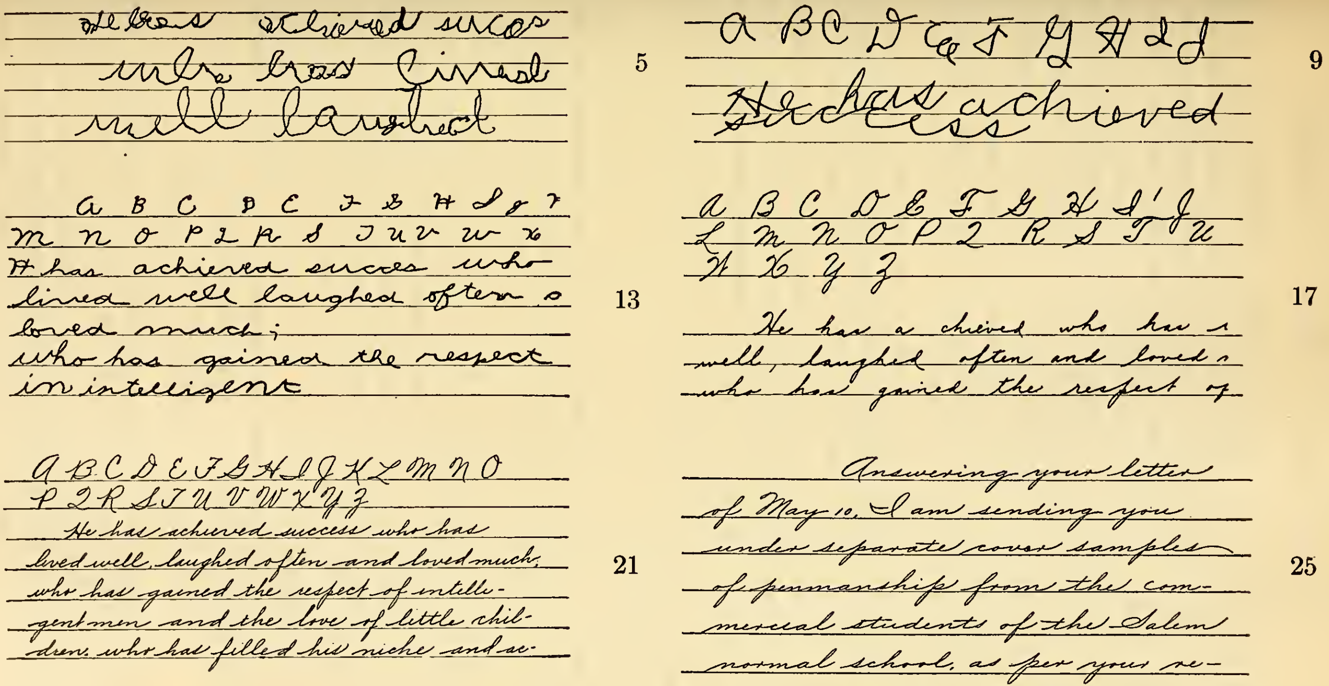

5
9
13
17
21
25
He has achieved success who has lived well laughed
He has achieved success
He has achieved success who lived well laughed often and loved much;
who has gained the respect in intelligent
He has achieved who has lived well, laughed often and loved much who has gained the respect of
He has achieved success who has lived well, laughed often and loved much; who has gained the respect of intelligent men and the love of little children. who has filled his niche and ac-
Answering your letter of May 10, I am sending you under separate cover samples of penmanship from the commercial students of the Salem normal school, as per your re-

Fig. 20. Specimens of a few samples of handwriting in the Starch handwriting scale for children in school grades one to eight. Standards based on 6,000 pupils. From D. Starch, 1919.

difference. The principle of this relative difference between the intensity of two stimuli necessary for the least observable difference has been applied to other perceptual experiences. For a barely perceived difference in brightness the amount of added light must be 1/100 of the standard brightness; to perceive the least possible difference in the length of a line, the difference must be at least 1/50 of the standard; in the loudness of a sound there must be a difference of 1/3. These relations hold, and have been repeatedly found by other experimenters for standards within the middle range but not for extremely small or extremely large standards.

The greater the difference between two stimuli, the larger the percentage of individuals will be who perceive it; the smaller the difference, the greater the number of errors in perception. Cattell and Fullerton (1892) determined the number of correct perceptions which were made for varying differences in weights using a standard weight of 100 grams. The difference between 100 and 104 grams was perceived by 68 per cent of the observers, and the difference between 100 and 116 grams was perceived by 94 per cent of the observers.

In place of weights it is possible to take examples, ranging from very poor to very good, of mechanical designs, freehand lettering, or handwriting and submit the range of examples within each category to groups of observers. In this way a quality scale can be developed. As an illustration specimens of some of the qualities of children's handwriting are given in Starch's handwriting scale, Fig. 20 on page 177. In the original scale, which extends from quality 0 to quality 25, equal psychological differences were determined between each successive quality step. This equality between specimens means that the differences between them are equally perceptible by the observers. Such a scale permits comparison of any handwriting examples for a quality rating. This type of rating is used in education and for commercial judgments in business.

Rôle of Attention in Perception

In perception and observation, the factor of attention is exceedingly important. There can be no full and clear perception without the focus of attention. In Chapter III attending was referred to as a condition of lowering and raising sensory thresholds; they are lowered to receive stimuli and raised to exclude stimuli. The more attention is concentrated on one part of the visual field, the higher must be the thresholds in other sensory fields to exclude disturbing stimuli. When various stimuli dominate our behavior, they are being given attention. The muscular "set" and adjustment to intensity of thinking illustrated by Rodin's "Thinker" are indicative of the increased muscular tension present in concentrated activity. The mobilization of the central nervous processes to facilitate all relevant and supporting impulses, the widespread contraction of the skeletal muscles, the respiratory changes at the moment of sustained attention, and the coöperation of the entire complex organism toward that achievement which it has set out to accomplish are evidences of the high degree of control over self which exists during attentive moments. Effective work seems to depend upon this high degree of self-control in which a persistent direction of attention is maintained until the motive is satisfied and the driving force expended.

The range of apprehension. The range of apprehension has been studied to determine the number of objects which can be observed during a fraction of a second in which they are exposed. If a number of separate items such as dots are exposed for one-fifth of a second or less, the average person would not be able to apprehend or focus perception to grasp more than four or five of them correctly. Separate unrelated items are much more difficult to apprehend than meaningful patterns, therefore more dots can be observed in the short exposure time if they are arranged in a familiar pattern. This principle was illustrated earlier in this chapter with the letters in the word "stratosphere."

The number of things to which one can attend at one time is limited. Reading and trying to listen to someone speak over the radio are two activities one often attempts to accomplish simultaneously, but either the one or the other is attended to intermittently. When you attend to the reading you do not hear what is spoken over the radio. But while you walk you find it possible to breathe, or converse with a friend, or even read a paper. If a multiplicity of activities progresses effectively at one and the same time, only one of the activities could require your entire attention. The greater the attention required by one activity, the more automatic must be the accompanying activities. Habitual activities, on a lower level of action than they were when first learned and attended to, usually do not interfere with activities on higher attentive levels. The way in which the nervous system controls various simultaneous processes which do not interfere with but may facilitate each other will be discussed later in this chapter under the subject of distractions.

Instability and selectivity of perceptual patterns. Attention "shifts" periodically. As you look at the ambiguous figure of the wineglass and two faces in Fig. 21, try to hold one view when you see it. The shifts from one to the other occur rigidly and are quite involuntary. There are two distinct perceptual patterns which persist in occupying the focus of attention referred to as an illusion of reversible perspective. A classical example of ambiguous figures is that of the cubes, Fig. 22, in which the number of cubes may represent either six or seven, depending on the way you look at them. Reversible perspective is thought to occur when cues of relative distance in the immediate background are either lacking or contradictory. These characteristic shifts in perceptual patterns due to periodic shifting of attention are illustrative of transitions which take place in human behavior when characteristic types of response shift from one type to another in learning and thinking.

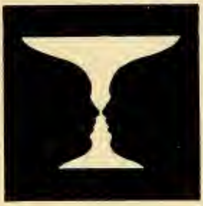


Fig. 21. An ambiguous figure seen either as a wineglass or as two faces. Adapted from E. Rubin.

Compare the effects of this uncontrolled shift in perceptual response as experienced with the ambiguous figures with the selectivity of perception which occurs between foreground and background, or simply "figure and ground," Fig. 23. Within a small visual area in the square on the left, the figure in black stands out leaving the surrounding white area as ground. The reversal occurs in the square on the right with the figure in white. Whenever we

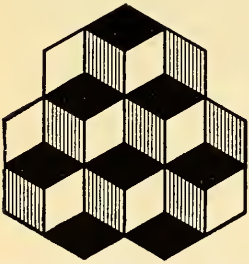


Fig. 22. The reversible cubes.

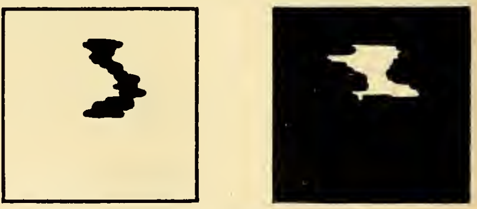


Fig. 23. Figure and ground. From R. S. Woodworth, 1934, p. 430.

are confronted with a figure or perceptual pattern of any kind, there is a tendency for one portion of it to separate from the rest and hold our attention. The Gestalt explanation of the relation between figure and ground is that the figure tends to be the more intense, complex, heterogeneous part, whereas the ground tends to be the less intense, the simpler, and the less heterogeneous part of the total field of impression. When the background is more equally distributed in space with the objects in that same space, Fig. 24, there is a reversal of object and background and less attention focused on a particular figure.

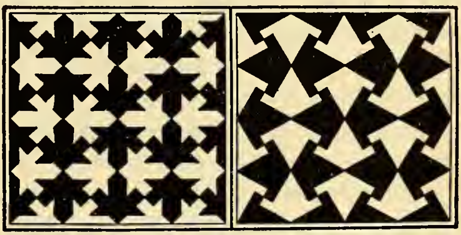


Fig. 24. Object and background. From E. C. Sanford, 1898, p. 254.

The elements which are selected for attention in a diversified perceptual field and the frequency with which shifts occur are dependent in great measure upon the individual, his habits and interests, and the circumstances of the moment. Much of the activity of attending can be brought under self-control. You can learn to attend to those things which are necessary for better self-mastery.

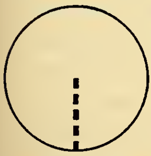


Fig. 25. The Masson disk.

Fluctuation of attention occurs when seeing or hearing barely perceivable sights or sounds. When at sea a distant light is clearly seen, then it disappears, then it is clearly seen again. A similar phenomenon is perceived when a watch is ticking at a distance where it is just perceptible. The tick "comes and goes." Try as hard as you may, you cannot see the light continuously nor hear the watch tick incessantly.

Measurement of this fluctuation of attention for minimal impressions can be demonstrated in the laboratory by means of the Masson disk, Fig. 25, and a suitable timing apparatus. As the disk is spun rapidly, the black squares mix with the white, and gray circles are seen which become dimmer toward the edge due to the relatively larger amount of white. The gray circle which is just visible as the disk is revolved, appears and disappears. Different individuals have found the fluctuation to occur from a fraction of a second to ten seconds or more. The cause is unknown, but it is thought due in some degree to changes in blood pressure, respiration, and other physiological processes. Guilford (1927) suggested that the periodicities of fluctuation in clearness of minimal visual stimulation were due to local retinal adaptation, eye movements, and central fatigue or inhibition.

Length of the attention period. The more complex the stimuli, the longer the attention period. Whitehead (1933) studied the rôle of attention during the time a task is being learned compared with that during the time after a certain efficiency was attained. For this study the output in assembling electrical relays was brought under control of experimental conditions in the test room of the Western Electric Company. The analysis of movements involved in the relay showed that some movements were unskilled bodily ones requiring a low level of attention, other movements were skilled, variable, and manipulative, requiring a high degree of attention. He found that attention to the job was high during the learning process, but as proficiency increased it gradually dropped to a low level, leaving a residual amount of "free attention" which prevented the operators from obtaining full benefit of their enhanced skill. The drop in the level of job attention was due, in general, to monotony or lack of change in the job situation.

Determiners of attention. At the same time that one experiences these various shifts in attention and perceives that attention is constantly changing, one must remember that attention has continuity and persists in some form as an attentive set for varying periods of time. Objects which attract attention may have an unusual size, great intensity, suddenness of appearance, sufficient motion, or persistence in repetition. The advertiser uses these factors to increase attention value. One of the greatest factors which operates to direct attention to any one thing is that activity within you known as temporary interest. A botanist will see a minute plant in the woods which would never attract the attention of one not so trained. A musician will hear an overtone which is unheard by others. If you are in need of a job you will see the "want ad" for that specific work, no matter how small and insignificant it may be on the page. Appeal to individual interests and habits is the surest means of attracting attention.

Degrees of concentrated attention. Concentration seems impossible when hunger, thirst, undue warmth or cold intrude into one's activities and cause discomfort. Fatigue, bodily sensations, and the confines of a small working space are definite disturbers of concentrated attention except in unusual cases. The creative thinker has organized such a highly integrated mechanism for concentrated attention that he is known to ignore the usual disturbers of sustained thought, not only those which come from outside but also those which come from within as fundamental drives and organic needs. Hunger, sleep, comfort, fatigue, or the most startling noises may not be obtrusive to his higher level of concentrated activity. He seems oblivious to the world about him at moments of heightened creative activity. Edison attended to the persistent intrusion of ideas struggling toward a solution and did not heed routine schedule. At those times he napped in his laboratory whenever possible and ate food that was placed in front of him.

We approximate this highly controlled state of concentration when intense motivation is aroused by a problematical crisis in family relations or in business affairs. The human organism is known to go without regular meals and sleep for several days at times of great excitement or moments when there is necessity for prompt action. The control of persistent ideas so that they are directed toward a constructive goal, and of persistent emotions so that they are not destructive, are two great essentials in satisfactory adjustment and achievement.

A form of attention which is extreme and beyond self-control is observed in hypnotism. Fixation of attention by the person to be hypnotized is essential. The subject who quietly concentrates for a few moments upon the effective activities of the hypnotist soon loses all sense of marginal stimuli and attends only to the suggestions of the hypnotist. This leads to many errors in perception since the subject is literally asleep and responsive to no stimuli except those from the operator. The person who can be hypnotized is characterized by certain temperamental qualities of dependence and tends to have a loosely integrated mental mechanism. The hypnotic state to any degree is dependent upon a favorable attitude on the part of the subject. Probably most people cannot be completely hypnotized, but they are subject to the effects of a similar principle whenever they permit themselves to be controlled and dominated by others. The completely hypnotized individual loses all muscular control, much of his sensory functioning such as touch, sight, and hearing, his memories, and ability of decision. Certain functions become dissociated and appear independent of other functions as illustrated by the automatic writing which often reveals lost memories. Other functions which become dissociated through the suggestions of the hypnotist are performed after the hypnotic trance is over, and the subject is unaware of the causes of such behavior. In ordinary life the heightened susceptibility to direction characteristic of the hypnotic state may serve as an effective technique for the psychologist or the physician to counteract "delusions of persecution," the persistence of hallucinations, or the frequent illusions that one has symptoms of a prevalent disease.

THE EFFECT OF EXTERNAL CONDITIONS

Distractions which influence concentrated attention in mental or manual work may vary from the smallest detail to the largest interference. Many so-called distractions are only temporary. The organism's capacity for adaptation often counteracts momentary disturbance. A college student who worked in the boiler factory took many spare moments for study while at the factory. Soon he found that study under conditions of less noise became very difficult. When once he learned to work with noise, its removal proved a disturbance in subsequent learning. It is an oft-repeated tale that the man who lived in the city and slept through a multitudinous variety of noises found it impossible to sleep in the country the first night or so.

Influence of distractions. When do stimuli produce conditions of distraction? Any stimuli, either external or internal, which break through and are antagonistic to the attentive set of an individual at any one time produce a condition of distraction whether temporary or prolonged. Dulsky (1932) suggests that a distractor is a stimulus which exerts a deleterious effect on performance or efficiency, hence a stimulus which has no effect on performance is not a distractor. In experiments, generally those stimuli which are expected to be distractors are often referred to as distractions, regardless of their effect in specific situations.

The extent to which you permit your own concentration to be distracted is dependent for the most part upon your conscious intent to work and the degree of your own self-control. Fryer (1934) studied motivation and conscious intent of subjects to work under changing auditory situations in their immediate environment. The rate of work in simple arithmetic increased and decreased as the peal of five bells was heard, only in so far as the auditory changes affected the conscious intent to work more or less quickly.

Jenkins (1933) trained five observers to perform a simple motor task and then studied the effects of distraction in the form of a continuous tone of 260 cycles. The motor task consisted in removing one hundred metal pegs in a square, one at a time, as rapidly as possible and placing them in a like arrangement in another square. When the task had been learned so that it could be performed at a high and constant rate, trials were made with and without the distraction. No apparent difference was found in the time of the trials with or without the distraction. A continuous distraction of this kind was readily habituated to and did not have any objective effect.

Many students are known to study in their rooms with the radio going at full blast, but there has been no systematic study of the advantages or disadvantages of the radio to study. Occasional inquiry has revealed, however, that its chief purpose is to exclude other disturbers of concentration. Another psychological factor, the continuity of sound which often stimulates thinking, may be operating in such instances. Continuity of sound, such as that produced by an orchestra or a waterfall, as well as continuity of movement of the whole body such as riding in autos and trains, are known to stimulate mental and motor activity but are seldom recognized for these psychological values.

Measurement of the effect of distraction has proved difficult. Morgan (1916) found that an individual's greatest strength can be discovered by setting him to work against mechanical noises. In an experiment the subject was isolated in a quiet room and given a difficult task to do on the typewriter. His speed and accuracy were recorded by suitable apparatus, also his breathing and the force with which he struck the keys. He was told to work as fast as possible. Suddenly loud bells and buzzers from various parts of the room were heard and seemed to be a disturbance at first. Since this was a test and the noise was probably a part of the experiment, he put forth extra effort to overcome the noise and actually increased his speed with no loss of accuracy. Recordings by the apparatus showed that he pounded the keys harder and tended to speak the letters. Other physiological changes may have occurred as well, such as the amount of energy he expended to maintain his performance and overcome the distraction.

Many experiments dealing with extraneous stimuli which are supposed to be distracting and to interfere with the dominant interest at the moment have shown one of three effects upon individuals. First, if there is little self-control the distraction usually attracts some degree of attention. Second, if there is sufficient self-control, the distraction is only momentary and the resulting effort to overcome it increases activity. Third, if there is a high degree of self-control, habituation to a foreign stimulus is complete, and there is no effect on concentration or performance. When distractions are introduced in experiments with the expectation that they will interfere and inhibit performance in a task but they are found to accelerate and enhance this performance, the effects of distraction seem paradoxical. The increase in the rate of activity as a result of distractions may be the result of an increased determination to overcome obstacles. Slight disturbances are known to effect greater output. Dangers often increase courage.

The external conditions thus far referred to have been due to irregular stimuli which varied and may or may not have been successfully brought under control. Other external conditions due to more regular stimuli tend to be more constant, such as temperature, humidity, fresh air, and illumination. These conditions may also affect concentration for work but are more readily brought under control.

Control of indoor atmospheric conditions for concentration. The effect of atmospheric conditions on work has been thoroughly studied by Thorndike and others under the auspices of the State Commission of Ventilation. They conducted an experiment in which adults were subjected to work in a room heated to 86° Fahrenheit, with relative humidity of 80 per cent, with stale air and stagnant (no motion) air. "Optimum" conditions were considered to be temperature of 68° Fahrenheit, 50 per cent relative humidity, and air circulation of 45 cubic feet outside air per minute per person. The subjects in the experiment, when urged to do their best, improved in efficiency quite as much when working in the supposedly unfavorable conditions as when working under "optimum" conditions.

Even though the conditions of the Thorndike investigation did not affect working efficiency, they did affect the comfortableness of the worker. It is highly probable that most persons could not work under such uncomfortable conditions outside an experimental situation. High temperature and relatively high humidity, or either one, are the principal causes of discomfort. The atmospheric conditions in which one concentrates for work should be controlled so that long-continued exposure to adverse conditions which may have a deleterious effect on health is avoided.

Control of illumination for concentrated work. Illumination for regular work and study is more satisfactory when it is of moderate intensity and there is an evenness of distribution. The tendency is to have a light too intense rather than too dim. Indirect lighting gives a more pleasing, restful effect and yet proves adequate for use. Much depends upon the diffusion of light and absence of glare. Eyestrain and fatigue which come from reading a book in the sunlight is an experience many have had of the ill effects of glare. The reflection of light at sea and from the sunlight on snow has a blinding effect unless relieved by colored glasses.

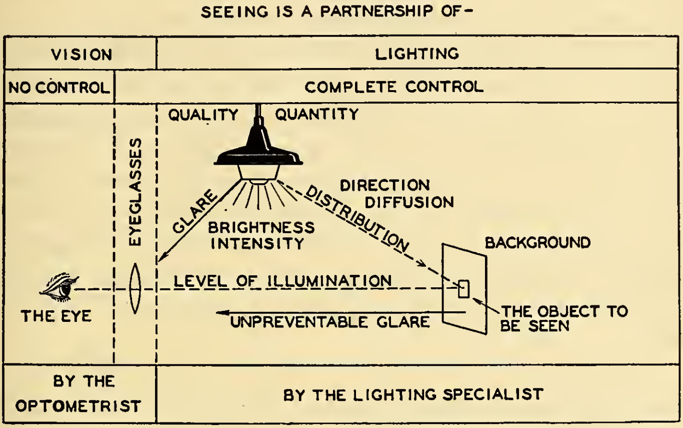


Fig. 26. The partnership of vision and lighting. From M. Luckiesh and F. K. Moss, 1931, p. 23.

Luckiesh and Moss (1931) reveal the advance made in the development of a visibility meter which indicates lighting requirements one needs to produce a comfortable and efficient relation between the eyes and the visual task. The effectiveness of varying intensities of illumination for visual tasks of relative difficulties has been determined in terms of foot-candles. Such a foot-candle scale is a part of the visibility meter. The interpretation of this scale of illumination intensities is given in general recommendations for visual tasks of different difficulties, in which *100 foot-candles or more* are for very severe and prolonged tasks, such as fine engraving; *50 to 100 foot-candles* are for severe and prolonged tasks, such as proofreading, and average sewing; *20 to 50 foot-candles* are for moderately critical and prolonged tasks such as clerical work, and ordinary reading; *10 to 20 foot-candles* are for moderate and prolonged tasks of office and factory; *5 to 10 foot-candles* are for visually controlled work in which seeing is important but casual; *0 to 5 foot-candles* are satisfactory for perceiving larger objects.

The relation between vision, with or without eyeglasses, and the light in which one concentrates, Fig. 26, determines the ultimate effect of one's visual adjustment. Lighting, important as it is for accurate, efficient work, is that part of the visual effect which is in our complete control but woefully neglected. Therefore the more you can profit by the technique which is being developed in the new science of seeing, the more you will make effective use of energy and lessen eye fatigue. Tired eyes interrupt continuity of work and defeat the best intentions to concentrate.

How to Deal with Disturbers of Attention

The most effective conditions for concentrated work are free from those distractions which act as disturbers of attention. The simpler objective disturbers of attention can be easily removed, such as distracting knickknacks about a room, but the more complex distractions, such as a near-by radio, are not so easily removed. If the radio is in the family or in the dormitory, it may be very easy to have it turned off; otherwise, you must resist its disturbance by making a greater effort to concentrate. If the disturbance continues to interfere, try reading a story in which you become entirely absorbed. This may prove the beginning of a new habit in which you train yourself to attend to the task at hand.

Differential degrees of attending on higher levels of mental activity are illustrated by the experience of Sir William Hamilton, the great mathematician. For weeks he had had an active interest in a problem of equations. While approaching Brougham Bridge near Dublin "an undercurrent of thought was going on" in his mind although he was talking "now and then" with Lady Hamilton. Suddenly he wrote down in his notebook the "fundamental equations . . . exactly as I have used them ever since." "The galvanic circuit of thought" was completed and he felt a great relief from an intellectual want.

If you sincerely wish to exclude stimuli which are distracting, form a habit of inattention or reduced awareness to oft-recurring distractions. Train yourself to disregard them without great effort. Habituation to new distracting stimuli occurs constantly. The extraordinary ability of the organism to adapt to new situations is shown by its control over the influence of disturbances. The reserves of energy called forth to resist antagonistic stimuli are usually unknown until an extraordinary situation arises. Overt manifestations of the expended effort are increased muscular tonus, gritting the teeth, reading aloud, or closing the eyes.

Positively concentrated attention to the problem or performance was found by Ruger (1910) to be one of the most favorable attitudes for efficiency. In the solution of mechanical puzzles he identified three directions of attention or attitudes. One was the problem attitude where the worker paid no special attention to himself or the observer in the room but attended exclusively to the task to be accomplished. A second was the self-attentive attitude in which the whole attention was on self and not on the problem. The third was the suggestible attitude which interferes with concentrated work. The person supposed to know the solution was the object of attention. The first attitude proved to be most favorable for concentrated attention.

There are several degrees of control over one's abilities to attend to work. First, least control is exercised when attention is spontaneous and non-voluntary, such as complete abandonment and absorption in a book, drama, or symphony. Second, more control is necessary when attention to a task is voluntary but must be forced, such as forcing one's attendance to an unsatisfactory job. Third, greater control is necessary when attention is involuntary. Conflicts interfere. You are unwilling to meet the problem, yet you must keep the task within your control. Fourth, the greatest control is exercised when distracting stimuli are absorbed into the work at hand by integration. In most learning processes, antagonistic stimuli are present which do not facilitate learning, and tend to interfere with stimuli from simultaneous processes. When the higher integrative process is achieved, antagonistic stimuli tend to be absorbed into higher levels of activity in which they cease to be antagonistic. The neural mechanism is organized in such a way that it can permit simultaneous activities to occur which may have been incompatible for a period of time and then, with practice, unified into a higher system of integration.

Have confidence in your ability to deal with disturbers of attention. Put forth the energy necessary to meet them in the first place and give your system time to adjust to the new situation.

In general, the main suggestions for concentration for work may be summarized as follows: (1) Develop perceptual behavior patterns which facilitate concentration. Recognize the illusions in perception and learn how to use them for effective purposes. (2) Train yourself to observe accurately in all sensory experiences so that errors in perception will be reduced to a minimum. (3) The highest degree of concentration often involves discrimination of least perceptible differences; one can learn to control awareness of these slight differences in stimuli. (4) As soon as possible, identify the attentive attitude within yourself that accompanies productive thinking, and experience the intense satisfaction resulting from absorption in work which transcends all distractions. (5) Control the effects of expectation and susceptibility to suggestion which may easily interfere with concentration for work. (6) The attentive attitude may persist over a period of time, especially when stimuli are complex and motivation is strong. (7) Develop self-control over internal and external forces and conditions which act as disturbers of concentration. (8) The highest degree of concentration results when there is integration of conflicting and antagonistic stimuli into higher levels of concentrated activity.

Questions for Yourself:

1. If you are interrupted, how quickly can you return to the work at hand with undivided attention? In other words, to what extent do you control the effect of distractions?
2. What is your range of apprehension? Can you develop a plan for increasing it?
3. What habits have you which interfere with concentration for work? How can you transform them?
4. How accurate are you as an observer? How would you go about improving the percentage of accuracy in observation?

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CHAPTER IX

HOW TO USE ONE'S ENERGIES EFFICIENTLY

The twentieth century is known as an age of speed. Speed makes demands on any mechanism. Speed is not dangerous so long as it is controlled and all materials and organisms are adjusted to its demands. You need only to drive a modern motor car at an easy speed of sixty miles an hour on a superhighway and then be detoured on a narrow country dirt road where you are held in line behind a horse and buggy to sense the speed inherent in your car. Appropriate conditions for speed are necessary, such as adequate highways with clear view ahead, no danger from obstacles or interferences of any kind, new designs of motors and appropriate equipment, a human organism at the controls reacting safely and confidently in perfect command of himself and the intricate organization in front of and around him. Some of the qualities essential for man's control of intricate machinery, whether on land, sea, or in the air are intelligence, ability, safe operating habits, definiteness, accuracy, knowledge, steadiness, quickness, responsibility, power of decision, and adaptation. Some of the power which can be brought under the control of man with considerable ease is suggested in Fig. 27.

Similar characteristics and others which we shall consider are essential for man's control of his own energies. You become conscious of your control of energy expenditure when you live in the city awhile, New York City for instance, after having been accustomed to the country. Your individual speed of locomotion in the subways at rush hours must be increased to the tempo of the moving mass of humanity. When once you are caught in this rushing tide of humanity, you move with the crowd, cross-traffic is impossible, your destination is controlled by separate lanes of moving traffic. This speed of movement has produced an unbecoming human posture called the scuttle posture, in which knees are bent and the upper part of body inclined forward from the waist as in a "running-walk." Countryfolk are aghast at this speed, and become exhausted, but once they live in it awhile the human organism responds and adapts. At what physiological cost? We do not know, but science has made considerable headway in determining the cost.

FIG. 27. "The power under their control is handled as easily as that of an automobile." From *The New York Times*, June 2, 1935, by permission.

Some specific factors affecting the use of human energies are work, rest, fatigue, the will, drugs, diet, exercise, and environmental conditions. Knowledge of their influence over the use of energy must be accompanied by control of their influence for conservation of energy and satisfactory fulfillment of your needs and desires. To manage your energies is to manage yourself. How do you plan your work and rest periods? How do you meet fatigue? To what extent is the will a dominant force in the control of self? What is the influence of drugs? Of foods? How are human energies influenced by physical environment, temperature, air, light, and weather? How can you control these influencing factors for the economical use of energy and better use of yourself? These are some questions to be considered in this and the following chapter.

Conservation of Energy

Conservation of human energy refers to its endurance. Some individuals are as old at forty years of age, as others are at seventy years. Youth is active, busy, choosing exciting sports, preventing stereotyped forms of activity. Those who are in late maturity seek a simplified routine of activity, excitement becomes too exhausting, fatigue is not quickly overcome. They keep energy expenditure at a minimum by stereotyping energy habits, thereby eliminating excess movements.

Energy and late maturity. There are many individuals, however, whose expenditure of energy and achievement reaches its peak in late maturity. It is not a question of chronological age so much as it is the individual. Numerous scientific studies of ability of older persons are being made to determine by means of tests at what age a particular man or woman will need to quit work. The dead-line retirement ages for workers in industry, education, and government then will yield to differential retirement ages dependent upon each person's working efficiency. President von Hindenburg at 77 years of age took over critical responsibilities in the German government. At the age of 76 Clemenceau took the helm in France during the World War. Age in the Orient has been an achievement which was honored and respected. Henry Ford at 73 shows no signs of failing vigor. Justice Holmes was physically active and mentally keen, writing some of the finest Supreme Court decisions of his notable career not many years before his death at 92 years. Other examples of productive minds and energetic personalities in statesmanship, art, science, and industry are definite reminders of effective conservation of energy resulting from economical control of its use. Such energy should be forthcoming not only for work and business, but there should be a surplus for enjoyment of family, friends, and community life.

Certain levels of energy are recognized both physiologically and psychologically. We recognize excess energy as "second wind," and experience it at times when interest carries us far into the study and investigation of some problem. Integration of forces lifts one to a higher level of activity in which power to work is greater than had been known previously. James (1907) in his famous essay on "Energies of Men" refers to man's habit of employing only a small part of the energy he possesses.

> He energizes below his *maximum*, and he behaves below his *optimum*. In elementary faculty, in coördination, in power of *inhibition* and control, in every conceivable way, his life is contracted like the field of vision of an hysteric subject—but with less excuse, for the poor hysteric is diseased, while in the rest of us it is only an inveterate *habit*—the habit of inferiority to our full self.

James considers the energy level of writing higher than walking; that of thinking higher than writing; deciding higher than thinking; deciding "no" higher than deciding "yes."

Pitkin (1932) refers to five varieties of work which call for five levels of energy; the first level is reached in pure thinking, manipulating ideas, drawing inferences, and conjuring up schemes; the second level of energy is reached in writing ideas; the third level in public speaking, acting, concert singing and operatic performance; the fourth level in handling and modeling of material things; the fifth level in managing people as individuals or as groups, "for contacts with people, particularly with those whom we must persuade or order around, touch off potent endocrine reactions that burn us up in a bright flame."

Measurement of these levels of energy has not yet been accomplished, but there are some experimental data bearing upon their logical arrangement. Psychology is concerned with the control which human beings may develop over their own use of latent energies for efficiency in work. Your efficiency is a small per cent of created energy. The efficiency of a locomotive is considered good at 12 to 15 per cent, much created energy goes up the smokestack. The efficiency engineer is concerned especially with management of machines, of transmission and production in order to produce the best product at lowest cost. The industrial psychologist is concerned with the functioning of the human organism in its relation to machines and to other human organisms when the best product is created at the lowest cost.

In our discussion of efficiency we shall use Viteles' (1934) meaning of this word as "the method or condition of work which favors production at the least physiological cost to the worker and reduces to a minimum the feeling of fatigue and dissatisfaction experienced by the worker at his task." Generally speaking, your efficiency at the present time is determined by the method or condition of study and work which favors results at the least physiological cost to you and reduces to a minimum your feeling of recurrent fatigue and periodic dissatisfaction while at work. Are you ever 100 per cent efficient in this respect? If the concentration human engineers give to improvement of human efficiency approximated the concentration mechanical and electrical engineers give to improvement of machines, our efficiency would slowly rise and each period of the life cycle would be richer and happier.

The satisfaction of the worker in the last analysis is essential for maximum output which in turn effects a prosperous industry. Maximum health and highest degree of satisfaction of the workers must go hand in hand with maximum output relative to the amount of time at work. Crowden (1928) points out that the objective of fatigue reduction is to make sure that

> the workers in industry can use their bodily energy to the best advantage during the working day, and during those years which, for men and women generally, we may regard not only as years of useful productive life but years which should be enjoyed by them. Those years should not be limited in number by the intensity of their labor, by lack of care of the living machinery, or by the conditions under which that machinery performs its work.

WORK AND FATIGUE

The physiological effect of work is fatigue. Control of fatigue and recovery of energy for further work are not only physiological problems but very important psychological ones.

The curve of production as it varies during the working day, Fig. 28 on page 198, shows the peak of production in the third and fourth hours of the morning, a decline before noon to a point below the starting point in the morning, followed by a pick-up after lunch, and a decided drop late in the afternoon. In general this type of curve is representative of a day's progressive production in mental and motor tasks as well as manual labor.

The quality of work as well as the quantity is influenced by fatigue. Viteles (1934) reports a study of clerks at work in the auditing department of a railway company during their working day. Few mistakes were made early in the day, but the number of mistakes increased in the fourth hour and steadily increased to the end of the day. The number of errors in the afternoon was 14 per cent higher than those made in the morning. Certain laboratory studies, in which movements of men working at machines are photographed, show that these movements become irregular and inaccurate when the worker becomes fatigued. The accident curve, developed from studies of accidents during the working day here and in Europe, bears a close relation to the production curve. Psychologists and physiologists are inclined to stress fatigue as the chief cause of accidents.

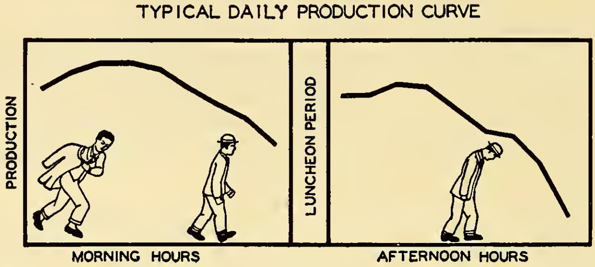

Fig. 28. Typical daily production curve. From M. Viteles, 1934, p. 284. (Adapted from Burtt.)

The initial spurt and the initial rise in the production curve evident in much but not all work are not usually maintained by the worker. This may be due to several factors involved in the constant, repetitive, and monotonous nature of the work. It is natural to adopt a certain pace in continuous work as a matter of conservation of energy, but it is often physically impossible to maintain the beginning pace in continuous work. Poffenberger (1927) reports that when seven students were asked to squeeze a hand dynamometer just once as hard as possible, an average of 31 lbs. was exerted. When they were told to squeeze it fifteen times exerting as much effort as possible, the average of the first trials was only 24 lbs.

The physiological effect of fatigue. Work and fatigue involve the whole organism and interact in definitely organized patterns when the individual raises or lowers his levels of accomplishment. The physiological changes in the body which occur in fatigue involve not only the muscular and skeletal systems but the respiratory system, nervous system, digestive tract, endocrine and other glands. Less energy is available when waste products in muscles and blood stream are not liberated as fast as they accumulate. The accumulation of lactic acid in the muscles produces fatigue and a certain amount of oxygen is essential to reconvert lactic acid into glycogen, the energy-producing material. When muscular tension continues in the absence of oxygen, the body incurs an "oxygen debt," overtly experienced in breathlessness. This is not, however, like the national debt, says Irving (1934), "for it has precise limits and must be repaid in terms identical to those under which it was incurred." A muscle is never fully relaxed. It always maintains a certain degree of tonus.

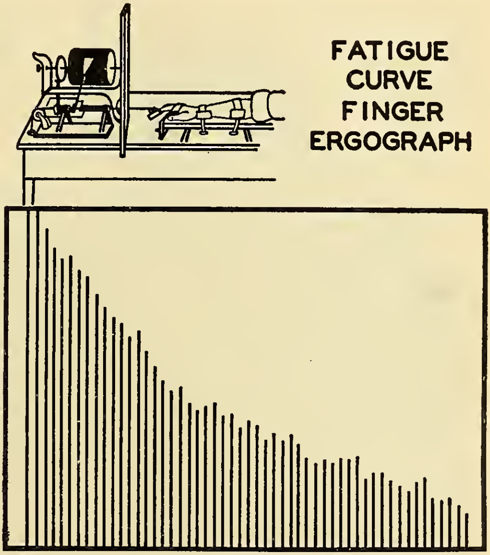

FIG. 29. Muscular fatigue curve developed by finger ergograph. . . . Fatigue is measured by the decreased amount of work done by a single finger within a few minutes of time. From M. Viteles, 1934, p. 282. (Adapted from Ioteyka.)

The effect of muscular fatigue was first accurately measured in the laboratory in terms of decreased amount of work done. The finger ergograph, Fig. 29, measures the work done by movements of a single finger in lifting a weight. This record of muscular contractions for only a few minutes shows decrease in the amount of work until finally the finger refuses to work. After 15 to 20 minutes' rest, however, there is complete recovery and work capacity is again at its maximum. Recent evidence indicates that nerves also are subject to physiological fatigue.

The physiological effect of work is measured directly by determining metabolic rate at which body energy is used, and indirectly by determining respiratory change in breathing, pulse, and temperature, changes in muscular strength, in chemical constituency of the blood stream, saliva, and urine, and in the nerve and vascular processes. The direct method used in the laboratory to determine metabolic rate is illustrated in Fig. 30. Through one valve in the face mask atmospheric air is inhaled and through the other valve exhaled air goes into a gas-tight container. Samples of exhaled air are collected periodically, one sample during rest, another during work, and a third during recovery. The three samples are then compared. Many adults have their basal metabolism measured at regular intervals to find out what the "cost" of activity amounts to for them. The "cost" is great for those whose energy output exceeds intake. The equilibrium between output and intake is then said to be off balance. When this equilibrium gets beyond your control, you need to make better adjustment between work and rest.

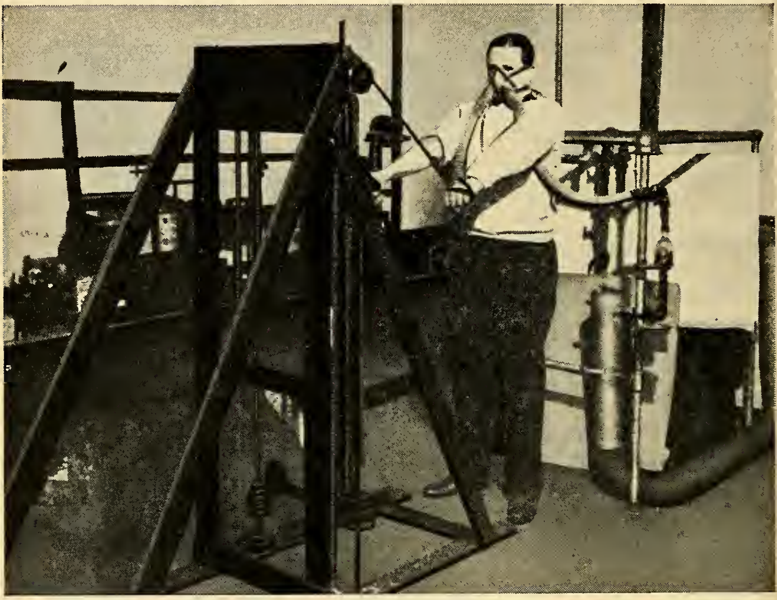

Fig. 30. A study of the "cost" of work in which the metabolic rate at which the body uses energy is measured. From G. Murphy, 1935, p. 423.

The "cost" of work can be determined physiologically for either mental work or physical work, in so far as the results of work can be determined by the physiological methods we have discussed.

The difference between the two is probably a matter of degree only. Although we shall refer to mental work as work involving the nervous system, and to physical or muscular work as that involving the gross muscles, no work that we know of is exclusively muscular, and some muscular tension is known to be present and important in learning and thinking. Fatigue from mental work is difficult to determine physiologically outside that which is present in the muscular system and blood stream because there are as yet no instruments delicate enough to measure the amount of energy used by the brain. Much mental fatigue may be due to boredom or lack of interest more than to the great amount of work done. This raises the question as to whether there is such a condition as mental fatigue, which we are inclined to believe is due to the effects of mental work.

The effect of mental fatigue. Tsuru Arai (1912) thoroughly investigated the mental fatigue problem in four experiments. Only the first will be considered in which she herself was the subject. For four days in succession from 11 A.M. to 11 P.M. she performed a constant mental task of multiplying in her head four-place numbers by four-place numbers without pause. During practice previous to the experiment she obtained a high degree of initial proficiency. After the third day's work she experienced subjective fatigue, but at the end of the week's concentration she felt as cheerful as usual and experienced no effect, physically and mentally, from the hard work. Evidences of fatigue were found in more irregularities and some loss of control noticeable in the latter half of the experiment, also the fact that it took her five minutes to do the first example and about eleven minutes to do the 67th example. Complete mental and physical exhaustion was experienced by Painter (1916) in mental work of multiplication beginning with two-place numbers and advancing to four-place numbers. He concludes that, "There exists a definite and relatively abrupt appearing point beyond which mental work becomes impossible." One of the main factors in mental collapse may be the loss of control of more complex integrations.

Students may experience a "static" condition in continuous mental work, referred to as blocks in progress. These blocks seem to be characteristic of work with a high degree of continuity and homogeneity. Bills (1931) discovered that blocks occur more or less rhythmically at an average frequency of about three per minute. The physiological basis for the block probably consists of the refractory phase of any excitable organ, in which the organ after responding to a stimulation becomes "refractory" or unresponsive for a brief period.

Studies of fatigue are concerned with three phenomena. First, the changes in level of performance expressed in decreased capacity for work, which might be called *objective fatigue.* The finger ergograph measures this type of muscular fatigue. Second, the physiological changes due to the chemical products of fatigue, which might be called *physiological fatigue.* The metabolic rate of energy consumption measures this real basis of physical fatigue and also mental fatigue in so far as it can be determined physiologically. Third, the feeling of fatigue in ennui, bodily weariness, tiredness, dissatisfaction or boredom, which might be referred to as *subjective fatigue.*

Objective fatigue, or variations in output, may have little or no relation to subjective fatigue, or the person's report of his feeling of fatigue. And neither output nor subjective feelings may correlate closely with the physiological condition. When a person's report of tiredness coincides with deep-seated bodily changes causing a decrease in work, the subjective feeling will then serve as a means of control and protection in preventing exhaustion. This control may easily fail, however, in intense emotional situations, such as intense grief, where no discernible feeling of fatigue serves as a warning even though there is exhaustion at the end of the period. Intense concentration in creative work, such as scientific research or composing a symphony, which seems to possess one through many hours of steady work, may give one no fatigue warning.

The relationship between feeling of tiredness and output of work has been studied in the laboratory by Poffenberger (1928). During five and one-half hours of continuous work such as inserting words into sentences to complete their meaning, and various other tasks, twelve subjects reported their feeling tone at the end of every 21-minute period. The quality of the feeling tone was expressed in seven degrees from "extremely good" to "extremely tired." The feeling curve dropped from the beginning but the output curve remained fairly constant throughout. The high rate of pay for the work seemed to balance fairly well with the observation of feelings of weariness, irritability, restlessness, threats to quit, outbreaks of profanity, so that there were no desertions. It would seem necessary to depend generally on changes in production and metabolism for the measurement of fatigue rather than the subjective feelings expressed by the worker.

There are various methods for the study of efficient use of energy in all activities which are the result of human interest in the worker. The elimination of waste motion not only has reduced expenditure of energy by the worker but has increased results and reduced the amount of time. The Gilbreths (1911, 1914, 1916) made the first observations and recording of movements used in various tasks for the purpose of discovering methods of least waste. In their pioneer investigations with the work of bricklaying, motions which caused the least fatigue were found most desirable. Every movement in bricklaying involved in picking up, mortaring, and laying bricks was analyzed; the placement of all materials to be used was changed so that least effort was expended; the routing of work was directed and simplified; as a result there was a reduction of useless moves from 18 to 4 in laying brick, and an increase in output per hour from 120 to 350 bricks. Gilbreth considers that no waste in the world equals the waste from needless, ill-directed, and ineffective motions. The movements of the hands at work are studied by means of light paths on photographic film produced by tiny electric bulbs attached to the fingers or hand, and by the slow-motion picture camera.

In bricklaying and many types of work, bodily posture and distribution of load are exceedingly important factors in producing fatigue. Much energy is wasted in homes bending over work places, such as sinks and tables where little or no thought has been given to height of these work spaces for the comfort of the worker. Fatigue can be greatly controlled by adjusting work materials so that the posture of the worker is favorable. Those bricklayers with satisfied and contented minds do not require so much rest to overcome the fatigue resulting from intensive effort. "The motions of a bricklayer," says Gilbreth, "working upon the wall of a church differing from his own religion are often vastly different from those that he is careful to make when the congregation to occupy it coincides with his own belief." These and various other psychological factors which affect the economy of effort and fatigue cannot be found in a work curve but they are basic in determining the control of human energy and increasing the comfort of the worker.

Another method of increasing control in the use of energy has been the reduction of hours of work during the day and week. In medieval times the worker's day was said to extend from dawn to dusk. Today the working hours have been reduced to 40 and even less hours a week for industrial labor. The majority of agricultural and domestic workers are yet on the old medieval schedule. Their work problem also needs to be solved.

Rhythms of efficiency in the worker are recognized as definite aids toward better adjustment between work and fatigue. When each individual worker is able to adjust work to his own rhythm, there is an increase in the ease with which work is done, brought about by the rhythmical regularity. Primitive people recognized this aid to work and used it in beating the anvil, threshing, and rowing. The traditional work songs of various occupational groups were developed to maintain a natural rhythmic pattern of work. Koch (1933) studied individual work rhythms of people sowing fertilizer, loading wheat, threshing, cutting tops from sugar beets, mowing grass, and digging potatoes, and discovered a rhythm of work which differed from worker to worker but had a constancy in rhythm from one work period to another and from task to task. He believes that those workers who for a given task express the most fitting and most natural rhythms, should be selected to perform that task, since unnatural rhythms only hinder efficiency. Group rhythms regulated with the metronome or music have shown that there are speeds and rhythms of optimal efficiency which are little known and are as yet an untouched field for scientific study.

INFLUENCE OF NOISE ON THE WORKER

Noise as a distraction with its effect on accomplishment has been discussed in a previous chapter. We are concerned here primarily with the influence which noise exerts on the worker himself rather than on the output. Noise unquestionably causes fatigue.

The psycho-physical effect of noise on persons results not only from irregular and blatant noises which are heard occasionally but from the constant regular din surrounding thousands of people especially in the larger cities. The disturbance of continuous and regular noise steadily diminishes as indicated by changes in behavior when adaptation occurs, but the accumulative physiological effect on a person warrants the reduction or elimination of noise. A recent report on the dangers of noise cites laboratory studies in neurology in which it was found that a blast of noise from the explosion of a paper bag has a greater effect on our brains than a dose of explosive nitroglycerin taken internally. Yet how often people burst a blown-up paper bag just to see a person jump. The intensity of noise measured by the decibel, the least amount of noise that can be heard, can be determined for the roar of Niagara Falls, the clatter from offices filled with typewriters and telephones, the din of human voices in a roomful of convention devotees, or the mass of conglomerate noises at the busiest intersection of downtown New York City. Recently the manager of a busy cafeteria called my attention to the new ceiling in his cafeteria which deadened the sound for customers. The psychological effect of this air-conditioned, quiet room where over 3,000 persons lunch daily presents a great contrast to the blatant and uncontrolled din of the streets. Naturally digestion is aided and the customer has a satisfying and comfortable lunch time.

Bartlett (1934) designates noise as an enemy. He finds that the investigation of noise presents difficulties inherent in any study of human behavior, which is affected by abnormal conditions of work. These are the difficulties. First, normal work at any task is a good long way below maximum efficiency. If it were not, when an extra demand is made we should crack and collapse. Second, any simple task can be rapidly automatized. When abnormal conditions are imposed, the task goes on as a routine cut away from any special conditions. Third, any complex performance will improve with practice for unexpectedly long stretches of time, and positive practice effects may mask any negative effects of unfavorable external conditions. The more complex and difficult a task, the more absorbing it becomes to a normal subject and the more the performer automatically cuts out all external circumstances. For these various reasons perhaps, other controlled investigations in the laboratory or workshop yield no evidence of any drastic impairment of function due directly to noise. Yet it is so closely related to work that the two interact to cause some slight decrease in both quantity and quality of work as it can be measured. Bartlett's suggestions for the reduction of noise center about the self in the home, at work, and in the community.

Regardless of what is done by others to reduce noise, you can always protect yourself in two ways. First, if possible, stay away from the centers of intense noise—especially during your holiday time. Second, use some form of ear defender, such as wads of cotton wool saturated with glycerin or vaseline and put into the ears. Ear defenders are used by many persons in airplane travel and are always a protection in unusual types of work such as riveting, pneumatic drilling, and cement mixing.

Architects and builders are constantly applying hygienic and sanitary principles in their building, but the public has not yet demanded consideration of noise reduction in building materials and type of construction. Many irritable days in the ordinary home arise from the transmission of sound from a kitchen, or from raucous voices, and lengthened telephone conversations. The mental comfort in hospitals is greatly affected by sound transmission. The noise from streets and certain localities could be controlled to a much greater extent in town planning and road construction. Factories, motor-testing grounds, and aerodromes should always be located in areas where they cannot become a noise menace.

Legislation to reduce the noise of auto horns has been in effect for some years, yet drivers persist in driving with their auto horns. It will be some time before education and training can aid legislation in this matter. Much of it depends upon the thoughtfulness and good manners of the driver. It is essential for the driver to consider the warning signal of the auto horn as an offensive weapon, but it is not necessary to use the auto horn as an indicator of superior and lordly rights on the highway.

Regardless of your own abilities of adaptation and tolerance, you will greatly reduce fatigue and increase your own comfort if you definitely control the extent to which you submit yourself to unnecessary impacts of all kinds of noises.

REST AND RELAXATION

We sleep one-third of our lives away. Why? There are other ways of resting but sleep is essential to maintain a normal, healthy, well-adjusted balance with the ever impelling stimuli in our environment. The practical problem of controlling the amount and regularity of sleep for your own needs is paramount for recovery from fatigue, counteracting mental tensions, relieving emotional stress, and maintaining general efficiency.

The psychological onset of sleep is conditioned by many stimulus values, some of which are time of day, increased quietness, darkness, the action of others, amount of air in a room, and warm temperature. The chief stimuli to sleep, however, are the accumulated waste products in the bodily tissues and blood stream. If sleep did not occur to reduce and eliminate these toxic substances, one would lose complete control of self and length of life would be shortened. Sleep is essential to life. Only in the last few years has sleep, the principal method of rest, received scientific study.

Loss of sleep. Experiments on puppies who have been kept awake artificially showed certain physiological changes such as a drop in temperature, decreases in red corpuscles, and finally death. Experiments with humans cannot be carried to such an extent, but various periods of sleeplessness have been studied for their effect on human behavior. The results of these experiments conducted under rigidly controlled conditions would apply for the most part to the effects of insomnia experienced by many people in routine living. In experimentally controlled conditions subjects were kept awake for a required time and given various tests and tasks to perform in order to observe any changes in proficiency. Subjects have been known to be awake 80 or 90 hours and able to perform certain tasks equal to and even superior to their initial performance, but the general effect of insomnia is negative rather than positive. Laslett (1928) found in an experiment, where there was complete insomnia maintained for 72 hours, that there were effects of significant magnitude in some motor and mental tasks. The loss in proficiency during insomnia, compared with results three days preceding the insomnia, varied from 9 per cent in visual-motor coördination, to 15 per cent in pulse pressure, and 26 per cent in tests of intelligence.

Reports from introspections and observations of behavior during loss of sleep indicate that there is considerable irritability and loss of emotional control, vivid hallucinations, muddled thinking, and poor control of speech. There is one exceedingly important fact that after long periods of wakefulness, normal recovery comes after four or five additional hours of sleep beyond the usual night's sleep. This is another example of the organism's ready adjustment to abnormal situations and the ability to counteract effects of undue strain.

The length of time one sleeps is probably a matter of habit. Civilized man has established a regularity and rhythm for the length of time spent in sleep from which few depart; adults sleep from six to eleven hours with an average of eight hours. Men of unusual ability are known to sleep only five or six hours at night, but it is probable they nap during the day. An infant needs from 18 to 20 hours of sleep, and small children 12 to 15 hours. The nervous person requires more sleep than the phlegmatic person. And extra sleep is required to counteract situations of emotional strain and excessive fatigue.

Depth of sleep is determined by the intensity of sound which is necessary to wake one up. From experiments to determine how soundly one sleeps, sleep has been found deepest during the first hour or so. At the end of the third hour one is awakened easily, as from then on sleep is shallow or light. First, there is a loss of voluntary movement and then of other functions, with imagination continuing somewhat active. The perception of sounds remains about the longest. In the dream state some brain patterns are very much more active than others.

Considerable movement in sleep is natural and beneficial. From photographic studies of movements registered in sleep, one moves at least once every twelve minutes. This varies according to the person, his age, the activities of the day before sleep, and the expected activities of the next day. Apart from movements directly caused by anxiety, the ordinary motion in sleep is not restlessness but essential for complete relaxation. The bodily muscles seem to relax in groups and much of the turning and wriggling is a subconscious control of relaxation of all bodily tissues. Motionless sleep is not necessarily relaxing.

Certain postures are restful to certain groups of muscles. It is not advisable to sleep rolled up in a ball, nor stretched out straight. The kitten posture is most restful. Mechanical aids to sleep consist of a wide bed, a minimum of 39 inches, and a medium strength spring. When work or study is draining your energies a regular schedule of sleep should be followed vigorously. Much of the exhaustion and extreme fatigue of college students is due to their lack of control over rest (sleep) and relaxation. There is skill in being able to sleep well and regularly and it would be well to protect this skill as you would the attainment of any other skill.

There are various inducements to make one go to sleep at night, some of which are mere makeshifts for the most part, but have been used successfully by many persons, such as a drink of warm milk, a tepid bath, or a dull hour before bedtime. Eating a heavy meal or doing strenuous work just before going to bed are not advisable. Much rest comes from lying in bed, asleep or awake. In case insomnia persists, don't worry about it—you are never awake as long as it seems to you. Have a pad and pencil at hand to jot down notes, if necessary get up and go about some tasks. Control insomnia regardless of its stubbornness by doing something rather than lying in bed and fretting about it. The more insomnia controls you, the worse it becomes. It is probable that successful sleep is very much a matter of habit. The person whose activities are mostly on his highest level of energy finds it essential to control efficiency by profitable sleep.

Rest other than sleep. Sleep results in rest and relaxation, but all rest and relaxation are not dependent upon sleep. Rest periods from continuous activity have been natural patterns of behavior for all types of living organisms. Sleep is nature's way of introducing a rest period for one-third of man's period of activities. The noonday meal divides the work day into two four-hour periods. Men in the field and in the factory often have been known to pause from their labors for ten or fifteen minutes every two hours or so, thus introducing additional voluntary rest pauses. With humanizing of work methods authorized rest pauses are now a scheduled part of a daily work program. These rest intervals cause an increase in amount and accuracy of work, also a decrease in proneness to accidents and boredom.

The location, frequency, and length of rest pauses during the work period are problems to be solved by further scientific studies. The solution of these problems depends upon the type of worker employed, the nature of the work, and the length of the work tasks. Little study has been given to the type of worker and his most efficient means of resting during the rest period. Wyatt (1927) found that, for a 15-minute rest in the middle of two hours' work of adding numbers, complete relaxation increased achievement 9.3 per cent; uncontrolled rest gave a gain of 8.3 per cent; mild mental recreation, 3.4 per cent; and moderate physical exercise such as walking, a gain of 1.5 per cent. Cots are provided in some industries where the worker may lie down and sleep and completely shift from a working posture. Some aids to rest are fresh air, a couch at habitual rest periods, persuasion, suggestions, and progressive relaxation.

Progressive relaxation. Jacobson (1929, 1934) has given the phrase "progressive relaxation" practical significance. He found that mental work cannot cease until all the incipient movements of the laryngeal muscles and speech mechanism have ceased. When once complete relaxation occurs, mental work ceases and worry disappears. Relaxation is in opposition to muscular contraction. Therefore the muscular tension due to emotional stress naturally subsides during genuine relaxation. The nervous individual is one who tends to rehearse his griefs, difficulties, and problems, to consider them incessantly, and perhaps helplessly wonder what to do about them. This emotional reflection is the fountain head of nervous hypertension which relaxation mechanically shuts off. When once you know how to relax, for relaxation is a personal problem, you have the highest degree of control over fatigue and all its attendant complications. Unnecessary fatigue, restlessness, nervousness, irritability, mental fear, anxiety, and so forth affect many of the routine functions of the organism which are reflected in indigestion, constipation, heart troubles, headaches, and similar ailments. If relaxation can be carried to the extreme, it eventually relieves some of these pseudo-organic disturbances.

The cessation of mental activities in relaxation are partially described in Jacobson's (1929) account of the observable effects which the process of progressive relaxation has upon imagery. Complete relaxation of faint muscular tensions in the regions of the speech mechanism and the ocular areas have been found by scientific researches to be an important means by which relaxation can be accomplished. In visual imagery there is a sense of tenseness in the ocular region; when this faint tension is relaxed the image fails to appear. Ocular relaxation also affects auditory imagery since the individual tends to look toward the source of the imaged sound. Likewise motor or kinesthetic imagery may be relaxed away by progressive relaxation of the muscles of the lips, tongue, larynx, and throat. When relaxation of the muscles of the sense organs has reached completeness, the imagery processes diminish. As the processes of imagery gradually diminish, the processes of attention, recollection, thought, and emotion also gradually diminish. It seems that natural sleep follows a relatively prolonged time of the imageless state.

Few of us have ever experienced complete relaxation. Training oneself to relax completely would take considerable time and thought and a great amount of determination and willingness. Those who are suggestible and excessively dependent upon a physician will find it more difficult to make their own observations of relaxation and rely upon their own judgments. The time and thought necessary for them to learn to relax will be greater than for those less dependent. Those with toxic conditions, such as toxic goiter, in which there is the energetic behavior of a drive, show great need for this complete relaxation. The obvious means for quieting nervous systems, other than drug sedatives, are temporary shifts in location, change of scene, an interesting occupation, but even these are ineffective in handling serious nervous disorders.

Effect of Environment

Human energy is greatly affected by the environment, of which physical, social, and intellectual are a few of the possible classifications. Only a limited number of factors in the physical environment will be considered here, such as oxygen supply, ventilation and heat, illumination, and climate.

Human behavior is definitely influenced by the amount and availability of oxygen in the air. A certain amount of oyxgen is not only essential for transformation of lactic acid, the fatigue-producing element in the bodily tissues and blood, into glycogen, the energy-producing element, but it is a requirement for perpetuation of life itself. There can be a much smaller per cent of oxygen in the air than one would suppose before a feeling of discomfort and inefficiency is evident.

Aviation service in the World War needed men who could fly into high altitudes. This emergency necessitated study of human behavior and efficiency under atmospheric conditions in which there was deprivation of oxygen. When oxygen in the air for breathing is constantly depleted, definite behavior is observed as follows: consciousness gradually decreases, memory is affected, attention is disturbed and disappears as in the advanced stages of asphyxiation; an overexertion of energy is followed by tremor and incoördination with a breaking-down of the motor functions;

emotional behavior increases to such an intense degree that one becomes uncontrollably angry or hysterical, reacting with fits of crying or laughter. When respiration is forcibly arrested, Irving (1934) reports that the most violent of all possible physical struggles ensues, directed first toward relief but soon becoming incoördinate.

Respiratory activity under your control can be easily altered and even interrupted without any adverse effects on behavior. In fact, the controlled cessation of respiration increases the delicacy of your response and motor efficiency to a marked degree. In detecting delicate sounds of the least audible intensity, or in smelling a very delicate odor, it is helpful to hold the breath. This restrained condition is under voluntary control during many acts of great precision and delicacy. When one desires to control the interference of respiration in physical activities it is quite possible to hold the breath for several moments. Normally the breath can be held for 45 seconds without discomfort and with previous forced deep breathing the time can be lengthened to 5 or 6 minutes. Contestants in the Olympics who control their physical movements to the highest degree prepare for exertion of energy by the respiration of oxygen and deep breathing which will enable them to arrest respiration from 10 to 15 minutes.

Oxygen consumption used in mental concentration has been investigated by Miles and Behanan (1935) in a study of yogic breathing exercises. Traditionally the cult of yoga has used special breathing routines for a period of 20 or 30 minutes preliminary to mental concentration. The metabolism experiments were made with three common yogic patterns as practiced by a Hindu male, 31 years of age, after a two-year period in the regimen of the yoga cult. In the experiments on mental concentration only a very slight increase in oxygen consumption was found, after normal quiet periods. The results suggest that the artificial breathing patterns, if they influence mental concentration, do so probably more in psychological terms than in physiological terms.

Circulation of fresh air in its cooling effects on the body has been found to be more important for efficient work than the avoidance of an excess of carbon dioxide. The efficient use of ventilation in conserving energies and thereby reducing fatigue is easily within your control. You will recall from Chapter VIII that work is performed best when the humidity is about 50 per cent (humidity of

100 per cent does not permit evaporation from the body), the temperature 68° F., and a circulation of 45 cubic feet of fresh air per minute around the worker's body. Even higher temperature and humidity do not cause a great amount of discomfort or affect output if the ventilation of fresh air is adequate to allow body heat to evaporate freely. The cooling effect of an electric fan gives one a comfortable feeling for this reason.

Air conditioning has received an impetus since the results of scientific studies have revealed its great value in the efficient use of human energies. One study of air conditioning has been made in a new office of the Philadelphia Electric Company. For a period of twelve months the health records of the men and women employed in this new air-conditioned office were compared with the health of workers in another similar office not air-conditioned. The results of the study showed that in the new air-conditioned office the lost time of the employees, due to absences for colds, coughs, grippe, and other minor causes, was 56 per cent less than that of the employees in the office not air-conditioned. The psychological effect, in addition to the gain to the company, lies in the conservation of energy, and in the increased comfort and well-being of the employees. When artificial means of ventilation and cooling are not possible, always secure as much fresh air as is necessary and possible from open windows and cross-ventilation in a room.

Ineffective illumination is not only a source of distraction but a source of constant fatigue. The uniformity of light, or its even diffusion, is even more significant for the relief of fatigue than the intensity of light, because one adapts so readily to varying intensities. Momentary "blindness" in passing from sunlight to an artificially lighted theater is an interim of adjustment from light intensity of about 10,000 foot-candles to one of about 5 foot-candles. When once adaptation has taken place, the dim light proves restful because it promotes relaxation.

The effects of fatigue from motion pictures have been studied by Ferree and Rand (1919) in experiments of visual perception. Tests were given before and after viewing motion pictures. The loss in efficiency was considerable according to the distance the observers were from the screen. At a distance of 25 feet there was a loss of 50 per cent in efficiency; at 48 feet about 40 per cent; at 71 feet approximately 30 per cent. The general loss in efficiency is about equivalent to that which comes from reading clear print an equal length of time in ordinary artificial illumination. Bloodshot eyes for some individuals is an obvious indicator of eyestrain and fatigue from motion pictures.

Good lighting means that both the intensity of illumination and the diffusion are adequate and uniform. A pleasantly lighted room not only increases efficiency in performance but maintains a pleasant and comfortable feeling.

The influence of climate on health and consequently the effective release of energy is difficult to determine under conditions that are scientifically controlled. It is quite probable that the incidence of disease in specific climatic zones is not so closely related to climate as was formerly supposed, but is more closely bound up with unsanitary and unhygienic conditions. Man is dependent, however, upon a favorable climate for his livelihood. Unfavorable climates force migrations. Climate is defined by McKinley (1934) as the temperature and meteorological conditions or as the effects of the sun, atmosphere, and earth upon living objects at a given place on the earth's surface. The temperate zone or climate proves to be the most stimulating for the release of human energies. Sudden and great changes in climate are a drain on human energies.

McKinley predicts that if standards of modern sanitation, mosquito control, specific immunization, preventive medicine, and health education of the individual and community, could be maintained in the different climates, there would be a changed picture for the better. The establishment and maintenance of adequate standards for disease prevention and increased health are more within your control than the variation in climate and weather. Changes in weather are known to affect moods, but it is doubtful whether these changes have any physiological basis. Many individuals are pleasant and cheerful on bright days and disagreeable and depressed on dark days, which may come from psychological influences to a great extent.

Questions for Yourself:

1. How do you control your own expenditure of energy? Have you improved in your use of energy since coming to college? What is the highest level of energy exertion you have attained?

2. What relation exists between physiological fatigue and objective fatigue, also between physiological fatigue and subjective fatigue? How can you reduce your own fatigue to a minimum?

3. What suggestions have you for better control of noise within your own

living quarters, within your own working areas, and within your home community?

4. Have there been any suggestions in this chapter which will help you maintain a higher energy level by better control of rest and relaxation?

5. How do certain factors in your physical environment affect your use of energy?

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CHAPTER X

HOW TO USE ONE'S ENERGIES EFFICIENTLY (*Continued*)

WILL AND VOLITION

The balance wheel for the inhibition or release of energy is something within us acting in the capacity of an internal mechanism of control which we call the "will." As soon as an infant begins to assert himself and tries to control his response we hear the comment, "He has a will of his own." At first the infant is a creature subject to all the influences of the environment. Later he assumes responsibility for directing some of his own activity and energies. He makes the effort to overcome obstructions. He becomes acquainted with satisfaction derived from achievement and sets about to attain his own goals with a purpose in mind. Finally he makes decisions, he chooses what he desires and determines to attain it. This is willing or volition in action, an inner control over muscular response. It is the keynote of your control of self.

We have found that the one supreme way to deal with distraction was through a process of higher integration into which the distraction was absorbed and utilized. The higher integration proceeds under direct control, the deeper new sources of energy must be tapped and the more you must exercise your power of willing. Character, personality, achievement, social and intellectual adjustment are largely a result of efficient use of voluntary action. The "will to live" and the "will to learn," although modified by acquired habits of control, operate as dominating forces for the greatest enrichment of living and learning that you as an individual can attain.

Voluntary action, that behavior which results from an intention to act, can be measured. One of the classical experiments in psychology is the measure of simple and complex reaction time, the time it takes one to respond to a definite stimulus. The story goes back to 1796 when an unfortunate assistant in an astronomical laboratory at Greenwich, England, lost his job because he made too large an error in timing the passage of stars across the meridian. Those individuals who naturally react very slowly are not able to assume responsibility for accurate observations, nor are they safe in hazardous situations. In the experiment for measuring simple reaction time the subject is seated at a table with his finger depressing a telegraph key. He is instructed to release the key as rapidly as possible at the instant he sees a light behind a small circular hole in front of him. The muscular system is tense in a set of readiness which facilitates carrying out the act. At the same time faulty reactions are common. The energy for action, which is held in check in a tense state of readiness to act, tends to release itself unless there is strength of will to control and direct it. This common tendency to lose control of a great amount of energy, and to release it unexpectedly, leads to many complications and gross errors in human relationships.

In the experiment for measuring complex reaction time the subject is instructed to discriminate red and green lights and to release the telegraph key as rapidly as he can only for a red light but make no response to a green light. Other sensory stimuli, including auditory and tactual, can be presented as well as the visual. The reaction time which is the interval between the single stimulus and the prescribed response is recorded by the chronoscope in units of .001 second, or one sigma (σ). Therefore 100 σ would be .1 second. Another time unit and perhaps a better one is milliseconds or ms., meaning that .001 second = 1 ms., or .1 second = 100 ms.

Simple Reaction Times to Stimuli Applied to the Different Sense Organs as Found by Many Investigators[1]

Type of Stimulation	*Reaction Time*
Visual	.150 sec. – .200 sec.
Auditory	.120 – .160
Tactual	.110 – .160
Olfactory	.200 – .800
Gustatory	.300 – 1.000
Pain	.400 – 1.000
Temperature:	
Cold about	.150
Warm about	.180

Factors in the control of reaction time. Simple reaction time to several types of stimulation has been found to vary not only from person to person but to vary for one individual under different circumstances. Discrimination time is longer than simple reaction time. The amount of attention given to the task affects the time of reaction. Attending to the response (releasing the key) rather than to the stimulus lessens the time of response. Distractions would naturally lengthen the reaction time. Incentives in the form of mild encouragement were found to increase the reaction time about 8 σ. Punishment in the form of an electric shock has lessened the time of response. The personality, health, and attitude of the worker, when some phase of reaction time enters into his daily work, greatly influence the natural reaction time under test conditions.

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[1] From H. E. Garrett, 1930, p. 208.

An example of reaction time in nature, which also demonstrates a natural rhythm of response, is found in Buck's (1935) explanation of the synchronous flashing of the fireflies. Explanation of the phenomenon has been suggested from many independent sources, but as yet there is no general agreement. Some investigators consider it accidental; many, that puffs of wind influence the insects alternately to expose and conceal their lights; yet others found that the synchronism is due to uniformity in temperature, moisture, light, and air currents. It is known that the mating habits of certain species of firefly consist of the male flying about emitting single short flashes about every 5.7 seconds. The female remains in the grass and responds to some near-by male by flashing soon after each of his flashes as a normal preliminary to mating. Buck has found experimentally that the female, who flashes only a response to the flash of the male, invariably maintains the period of 2.1 seconds for her reply to the male. The exchange of signals is initiated by a single pair of insects, but other males within a distance of 10 feet often join in and their flashes are made in unison. The situation can be artificially produced by selecting a male and imitating the flash of the female by flashing a light at exactly 2.1 seconds after each of the male flashes. "It is indeed an impressive sight," says Buck, "to see such a group converging through the air toward one point, each member poising, flashing, and surging forward in short advances, all in the most perfect synchronism." This record of the normal rhythmic flashing period of the male and the reaction time of the female to the precise interval of 2.1 seconds suggests the tendency for rhythmic response and reaction time to be a direct function of one of the primary motives or urges.

Involuntary action can be brought into voluntary control. When one acts to avoid danger, to meet an emergency, or to adjust to social demands, many actions which are not ordinarily under voluntary control are marshaled and directed with precision and efficiency.

The possibility of acquiring voluntary control over "involuntary" muscles has been demonstrated by an ingenious experiment of Hudgins (1933). The involuntary control of the pupillary light reflex was brought under voluntary control by means of successive stages of conditioning, first with the ringing of the bell, then for the stimulus of squeezing the dynamometer so as to flash the light, and saying the word "contract." After a period of time and training, saying the word "contract" aloud, and finally in a whisper, was sufficient stimulus to elicit the contraction of the pupil of the eye. Similar training with a reduced light brought about the dilation of the pupil of the eye by whispering the word "relax," Fig. 31. P indicates the opening of the pupil just before the "inner saying" of the word "contract." The record of the contraction in response to the verbal stimulus "contract" and again of the dilation in response to the verbal stimulus "relax" indicates the extent to which a response, not under voluntary control, can be controlled voluntarily. In the verification of this experiment by others various important issues have arisen which leave this whole problem open for further study.

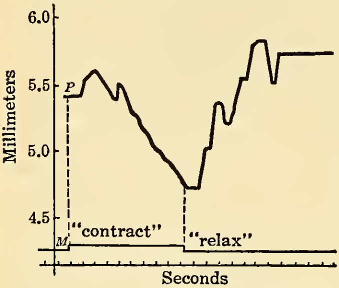

FIG. 31. A record of an experiment in which the "involuntary" muscle response of the pupillary reflex was brought under voluntary control by means of conditioning. From C. V. Hudgins, 1933, p. 30.

The significance of "inner speech" in bracing one up for strenuous occasions can be observed in various situations, such as the courtroom when a witness reiterates under his breath that he will not become confused or intimidated; in the concert hall when an amateur musters up all the courage he can for his performance by "talking to himself about it"; in the dentist chair when the patient reminds himself repeatedly that he will not yell no matter how much it hurts. Accompanying these internal verbal symbols is a characteristic muscular tension necessary to carry through the trying ordeal. In these and similar situations the act of willing or volition is not only accompanied by muscular tensions, but it is definitely articulated in the form of specific verbal patterns. These internal controls in an act of volition tend to exclude all interfering stimuli so that energies can be directed in a predetermined course. Hunter and Hudgins (1934) propose the hypothesis that an act of will is built up in terms of internal controls.

Behavior which shows signs of lack of will is characterized by inefficiency and despair. When internal control is lacking, when there is no zest for action, no directing of one's expenditure of energies, a state of no will, or abulia, exists. Many times such a state exists to an abnormal degree. When decision is impossible, hysterical symptoms, such as illness or self-imposed injury, are offered to excuse and relieve one from attempting a task and experiencing defeat. A frequent occurrence in which one postpones definite action by doing a thing over and over again indicates momentary lack of control. When such a condition increases, or day-dreaming becomes excessive, it is very necessary to begin checking these wasted energies and directing them toward attainable goals.

The extent to which one is called upon to make voluntary decisions is largely influenced by one's vocation. The frequency and rapidity of decisions made by individuals in executive and administrative positions cause the greatest amount of fatigue. Wishing to do precedes willing to do, but may never reach the stage of decisive action. Wishing to stop an offensive or annoying habit is a very different situation from exercising control over that habit. Loss of control over undesirable habits is similar to loss of power to make decisions. In either case there is lack of the inner verbal control to release the necessary energy to overcome obstacles. Strength of will usually lessens somewhat with more mature years. It is also known that the degree of self-control or amount of will power a person exercises in one situation may not be apparent in another situation.

The mind-cure movement, although annoying and spurned by many, is receiving serious consideration of medical scholars, not as an all-powerful force, but for the significant part it plays in one's will to get well and be helped. The yoga practice of mental training exercises the act of willing to an excessive degree. James (1926) tells us about his gifted European friend who practiced the yoga methods. By persistently carrying out for several months the methods of fasting from food and sleep, the exercises in breathing and thought-concentration, its fantastic posture-gymnastics, he seems to have succeeded in waking up deeper and deeper levels of will and moral and intellectual power in himself and to have escaped from a decidedly menacing brain condition of the "circular type" from which he had suffered for years. His friend wrote him, "You are quite right in thinking that religious crises, love crises, indignation crises, may awaken in a very short time powers similar to those reached by years of patient yoga-practice."

Between the excessive use of willing at one extreme and the absence of willing at the other extreme, there is a normal degree of internal control which favors comfortable orientation and an efficient adjustment to all the conflicting motives and complex forces of one's environment, whether it be the control of self or the control of others.

Influence of Drugs on Efficiency

Among the common drugs which affect efficient use of energies are caffeine, tobacco, and alcohol, which we shall especially consider for knowledge of their psychological effects. These are drugs used by people according to their own discrimination. They are not usually taken for medicinal purposes.

Large doses and frequent uncontrolled use of any of these drugs are harmful in various degrees. Small doses and occasional controlled use of these drugs present a very different picture. The psychological danger inherent in their use is the individual's habit-forming tendencies and his tolerance for drugs. There are two ways in which to exercise satisfactory self-control over the use of these drugs; one is to leave them alone, the other is not to use them in excess or in conditions where their effect is a personal or social menace. The resistance to drugs, which accompanies control of their excessive use, is characteristic of a superior organism.

Drug studies are exceedingly important. They present several difficulties found in the administration of the drug, the suggestibility of the subjects toward its effects, the lack of knowledge about long-time effects, and in the adequate interpretation of data. Few studies have been efficiently controlled in these respects to the greatest possible degree.

A careful study of caffeine was made by Hollingworth (1912) in which 16 subjects were given capsule doses of two to six grains of caffeine over a period of forty days. Every known precaution was taken to prevent errors and to regulate the daily habits of work, food, and rest of the subjects. The size of the doses can be compared to the amount of caffeine in an average cup of coffee with milk which is 2.5 grains, and an average cup of hot black tea of 1.5 grains. Tests of motor and mental functions of the subjects were made in which the effect of caffeine was observable usually within the first hour, reached a maximum in four hours, and remained for about twenty-four hours. From small doses of caffeine some acceleration of movement in motor responses and slight changes in motor performance were seen; from large doses there was loss of efficiency, unsteadiness, and tremor. Mental effects of caffeine other than general stimulation proved slight. Caffeine, the active principle in coffee, tea, and soda fountain drinks, proves to be a stimulant. The fact that there was no appearance of subsequent depression within three days after the records ceased is a very important finding. No longer time effect has been investigated.

Other effects of caffeine for adults are observed in some loss of fatigue, a psychological effect more than a physiological, and its cause of sleeplessness. In the experiment, doses of one to four grains did not usually affect the quality or quantity of sleep, but doses of six grains affected the sleep of most of the subjects. When caffeine is taken into an empty stomach as well as just before going to bed, its effects are greatest. Caffeine as a cause of headaches, dizziness, irritability, and so on, affects one in an inverse ratio to body weight. There are great differences in individuals. The habit-forming tendencies are evidenced by the complaint of headache when one is deprived of a cup of coffee.

Tobacco, especially when smoked, has been the subject of many statistical studies and experimental investigations. In many studies the necessary control of errors has been neglected so that their results are useless and interpretation of data grossly exaggerated. One of the most thorough and carefully controlled experiments in tobacco smoking was conducted by Hull (1924), with the support of the American Committee for the Study of the Tobacco Problem. Typical mental and neuromuscular functions were measured for 18 undergraduate college men (nine smokers and nine nonsmokers), after they smoked a large pipe of mild tobacco for 25 minutes, one and one-half hours after a meal. The smoke was blown from the mouth and not inhaled. The effects were traced for only one hour and forty-five minutes after the smoking ceased. Half of the experiment contained control doses in which no tobacco was smoked by the subject. These "blanks" consisted of a pipe with an electric coil in the bowl through which warm moist air was drawn by the blindfolded subject as the experimenter smoked tobacco near enough for the odor of tobacco smoke to be sensed by the subject. Under these conditions smokers failed to recognize the difference between warm air and warm tobacco smoke. The effects of smoking tobacco were slightly unfavorable in the simpler mental and motor processes. Here again long-time effects are not known. For the short period of time the effects are slight in most cases. However, there is no great gain in efficiency to warrant the practice of tobacco smoking for that purpose. The physiological effects of tobacco smoking are found in the slowing of heart action followed by a quickening of beat, an increase in respiration, and a rise in blood pressure during smoking followed by a rapid fall. This quick alteration between a stimulation and a depressant is not conducive to efficient use of energy.

Many business men, writers, and brain workers attest to the imaginative stimulation the smoking of tobacco gives them. This is primarily a psychological effect and may be accounted for in the supposed stimulation received from the act of smoking itself. People smoke because they like it, they like the odor and the taste of tobacco. It also furnishes a modern, socially acceptable substitute for the infantile sucking habits which long ago were found satisfying in the hunger motive. Likewise, as in gum-chewing and pencil-chewing, it provides an outlet for diffuse activity, thereby consuming a considerable amount of energy and preventing its direction for more efficient use.

Alcohol and its influence on human energy have also interested many investigators. Experiments with this drug have suffered from the usual sources of error in its control for experimental purposes, such as suggestibility as to its effects, tolerance of those who are habitual users, neglect in disguising the control doses, and the inability to study long-time effects. Another difficulty is the fact that too many of the investigators are apt to take sides for or against, thus influencing their method of securing data and coloring its interpretation. With alcohol and all other drugs a definite discrimination must be drawn between studies of propaganda and those scientifically controlled for securing unbiased factual data. Rivers (1908) was the first to disguise the doses successfully. Dodge and Benedict (1915) definitely established alcohol as a narcotic or depressant rather than as a stimulant as formerly supposed.

Hollingworth (1923) reports the most extensive study of the effect of alcohol on functions normally under voluntary control. Six subjects were given alcohol in the form of beer. Some days control doses were given in which the same amount of beer had the alcohol extracted, and other days no doses of any kind were given. The doses were given at noon each day so that tests could be made in the morning before the doses and again in the afternoon after the subjects had had either large doses of alcohol (five to six bottles of beer), or small doses of alcohol (three to four bottles), or control doses (beer with no alcohol in it), or no beer at all.

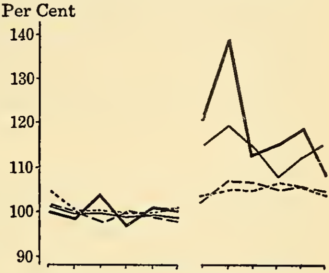

FIG. 32. The mental effects of varying doses of alcohol. From H. L. Hollingworth, 1923, as given by A. T. Poffenberger, 1928, p. 244.

Figure 32 shows the variation in results of one test in addition. The break in the horizontal line represents noon when the alcohol was taken, six tests were taken free from the effects of alcohol before noon, and six tests were taken in the afternoon. The vertical line represents the per cent of the average morning score for six subjects on two different days, twelve records in all. Higher scores mean poorer records, because the scores are in terms of the required time to perform the task. The heavy line is the average record for the large alcohol days, the light line for the small alcohol days, the broken line for the control days, and the dotted line for the days without beer. For all days the results are similar in the morning, but poorer in the afternoon than in the morning. Some of this may be due to generally lower ability to produce results in the afternoon as shown in the work curve in the previous chapter, but the heavy and light lines indicate a definite lowering of efficiency in this form of mental work. There is a clear-cut adverse effect of alcohol on all motor and mental functions, exaggerated effects for large doses, and less exaggerated effects for small doses. The pulse rate, however, is positively accelerated but general efficiency is lowered.

An observable effect of alcohol on mental functions is evident in its interference with learning and memory. The blocking of neural processes destroys the previously organized neural patterns essential for remembering which seriously disturbs memory. The influence of alcohol over a long period of its use is known, from various sources of evidence, to decrease endurance and increase susceptibility to fatigue. It is classified as a tissue poison. The observable effects of alcohol on motor functions are demonstrated outside the laboratory by the haphazard, uncontrolled movements of the alcohol user.

Miles, who has directed two major investigations on the effect of alcohol, has summed up the range of psychological effects from the slightest change in subjective feeling to complete stupor and utter incapacity known as deep narcosis. These typical mental and behavior symptoms described in the following scale of toxic symptoms are based on the amount of alcohol in the blood. The psychological effects are not the result of the quantity of the beverage as much as they are the amount of ethyl alcohol it contains. Those who observe these behavior patterns in others where control decreases with the increase of alcohol, can see only the deleterious influences of the drug. Those who have lost control of their physical, mental, and emotional expression can "feel" only what seem to them the beneficial effects. For them self-consciousness, fear, and inhibitions of all kinds are removed. They have escaped into another world where there is lack of discrimination, incoördinate fumbling, yet a "feeling" of extreme self-sufficiency.

Miles (1932) writes that

> The peculiar charm of alcohol lies in the sense of careless well-being and bodily and mental comfort which it creates. It unburdens the individual of his cares and his fears; relieves him of his feelings of inferiority and weakness. . . . The fundamental animal drives of the organism have free reign; the intellectual self-critic makes no strong pulls to the right, for he is dozing. Under such conditions it is easy to laugh or to weep, to love or to hate, not wisely but too well. Warmth of friendship may be expressed in ways seemingly appropriate but actually absurd. On the other hand, slight irritations, real or imaginary, cause outbursts of anger and may lead even to acts of physical violence.
>
> The increase in the tendency to sex offenses which alcohol induces has been noted from time immemorial. . . . Under these conditions stimuli that would ordinarily claim but little attention or be quickly put aside easily arouse emotion and emotional expression. It is claimed by scientific observers in this field that alcohol has a particularly weakening effect on the control of sex impulses in women and also that it

A SCALE OF TOXIC SYMPTOMS[1]

ALCOHOL IN THE BLOOD (mg. per cc.)	SUBJECTIVE STATES AND OBSERVABLE CHANGES IN BEHAVIOR UNDER CONDITIONS OF HEAVY SOCIAL DRINKING
0.10	Clearing of the head. Freer breathing through nasal passages. Mild tingling of the mucous membrane of the mouth and throat.
.20	Slight fullness and mild throbbing at back of head. Touch of dizziness. Sense of warmth and general physical well-being. Small bodily aches and fatigue relieved. Not fretful about the weather nor worried concerning personal appearance. Quite willing to talk with associates. Feeling tone of pleasantness.
.30	Mild euphoria, "everything is all right," "very glad I came," "we will always be friends," "sure I will loan you some money," "it isn't time to go home yet." No sense of worry. Feelings of playing a very superior game. Time passes quickly.
.40	Lots of energy for the things he wants to do. Talks much and rather loudly. Hands tremble slightly, reaching and other movements a bit clumsy; laughs loudly at minor jokes; unembarrassed by mishaps, "you don't think I'm drunk, do you, why I haven't taken anything yet." Makes glib or flippant remarks. Memories appear rich and vivid.
.50	Sitting on top of the world, "a free human being," normal inhibitions practically cut off, takes personal and social liberties of all sorts as impulse prompts. Is long-winded and enlarges on his past exploits. "Can lick anybody in the country," but has observable difficulty in lighting a match. Marked blunting of self-criticism.
.70	Feelings of remoteness. Odd sensations on rubbing the hands together, or on touching the face. Rapid strong pulse and breathing. Amused at his own clumsiness or rather at what he takes to be the perversity of things about him. Asks others to do things for him. Upsets chair on rising.
1.00	Staggers very perceptibly. Talks to himself. Has difficulty in finding and putting on his overcoat. Fumbles long with the keys in unlocking and starting his car. Feels drowsy, sings loudly, complains that others don't keep on their side of the road.
2.00	Needs help to walk or to undress. Easily angered. Shouts, groans, and weeps by turns. Is nauseated and has poor control of urination. Cannot recall with whom he spent the evening.
3.00	In a stuporous condition, very heavy breathing, sleeping, and vomiting by turns. No comprehension of language. Strikes wildly at the person who tries to aid him.
4.00	Deep anesthesia, may be fatal.

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[1] From W. R. Miles, 1932, p. 259.

> positively increases the urgency of these impulses. Not only is sexual promiscuity more frequent among intoxicated persons but also an increase in the incidence of venereal diseases occurs because of the inability of more or less drunken persons to take necessary preventive measures.
>
> The selfish level of existence which characterizes the state of the inebriated person, is shown by the discomfort and distress which the drinker may bring upon the members of his family, on whom he is really dependent, in the coöperative activities of living. The realization of the meaning and value of the relationship between parent and child or between husband and wife resides primarily in the higher mental processes. When this mental level is depressed or dulled by a chemical agency, the irksomeness of care and of constantly sharing with others may stimulate irritation or even marked dislike and so result in harsh and sometimes brutal responses. Alcohol thus becomes a source of anger, hate, and fear, three powerful opponents to human happiness (pp. 263, 264).

Accidents on the highway are due in great measure to the "dare to do it" effect of alcohol in drivers and their loss of responsibility. Gerendasy (1934) reports the recommendation of a committee on tests for alcoholic intoxication in which various forms of behavior are to be studied such as tests of speech, action, appearance, equilibrium, gait, memory, odor of alcohol, condition of tongue and pupils, handwriting, and a history of health.

Many persons never touch alcohol, others use it in moderate amounts with no tendency to lose self-control in its consumption at times of emotional crises. We consider these persons well adjusted and well integrated. Recent interpretations of personalities in which lack of control in alcoholic consumption is periodically observed connect this lack with neurotic tendencies and the breakdown of specific integrations. The control of self in the use of any drugs need not be considered a virtuous quality any more than the control of food intake would be a virtuous quality. Drugs are needed for medicinal purposes in illness and for the aged, but normally they evidently serve no real purpose either in maintaining or increasing the efficient use of energy.

Effect of Diet on Efficiency

The regulation of diet so that it is well balanced is a common-sense and hygienic essential of health, yet there are few scientific data to guide one in this regulation. More attention to nutrition would probably reduce much fatigue and increase muscular tonus for more effective work.

The effect of fasting on human behavior is determined by experimental studies which present many of the difficult problems connected with studies of drugs. Seldom do experiments meet all necessary conditions. Glaze (1928), however, has controlled conditions for three subjects, one of whom fasted 10 days, one 17 days, and one 33 days. The tests of mental and motor functions such as multiplication, color naming, writing backwards, steadiness, and visual acuity were practiced from 30 to 40 days previous to the fasting and for a period after the fasting so that there were testing periods of 77, 82, and 110 days. There was a loss in the tests during the fast with a rapid gain at the end of the fast to a level of performance above the pre-fast level. Fatigue was rapid as muscular weakness ensued, but olfactory sensitivity was enhanced.

The effect of modified diet on human behavior. Benedict, Miles, and others (1919) studied the effects of a restricted diet for 12 college men during the war. For four months these men were kept 10 per cent below normal in weight and compared in their test performances with men of normal weight. The restricted diet group did not suffer seriously. There was some decline in physical energy, the pulse rate was affected somewhat by exercise, and there was less drowsiness after lunch. The subjects more than regained weight at the end of the experiment. There is little evidence so far of the reduction of learning capacity when diet is restricted either in quantity or quality. Laird (1935) has found a light lunch advantageous for mental work. For 24 days, eight men ate their controlled lunch menus at the laboratory. During half the days they had a light dairy lunch in which crackers or cereal with milk was the chief dish, the other days they had fairly heavy meals. After the light meals mental work was done with more speed and greater accuracy, and there was improvement in ability to concentrate.

Change in diet is often necessary especially for infants, children, pregnant mothers, those with glandular disturbances or deficiency in calcium, and persons who migrate from one climate to another. A scientific study of the psychological effects of these changes is very complicated, since the effects are involved with so many other activities of the person's behavior.

Minute quantities of chemicals often separate life from death, yet little is known of the psychological effects of their presence or absence in the system. In the Philippine Islands many natives died from beriberi due to a diet of polished rice, before it was known that the rice husk would prevent the disease. Eijkma, Dutch physician and surgeon of a Javanese prison, saw hens paralyzed after eating the offal of a hospital in which convicts similarly afflicted were confined. Out of the observation came the discovery that beriberi is a deficiency disease. Thus the hen really ushered in the modern era of vitamins. Many diseases such as pernicious anemia, pellagra, diabetes, liver diseases, rickets, scurvy are no doubt due to an unbalanced diet over a long period of time. Some of these are arrested by certain vitamins present in fresh fruits, vegetables, milk, eggs, and cod-liver oil. Malnutrition and poor resistance to disease caused by improper diets keep the supply of energy below par and seriously impair the effective control of energy expenditure.

Diet suggestions are usually concerned with the proportions of protein, starches, and the balance between various salts and minerals. The changes wrought in the chemistry of the body by variations in these proportions are the cause of a variety of moods, and over a long period of time may definitely affect personality and mental health. From various sources of information based on experience and observation and some scientific experiments, Pitkin (1933) suggests a general control of diet for various types of work, which is adapted for inclusion here.

> Diet for sedentary or intellectual work:
>
> 30 calories of food per kilogram of body weight every 24 hours. Protein and starch in moderation.
>
> Diet for work moderately hard involving the muscles:
>
> 36 calories of food per kilogram of body weight every 24 hours. About 2½ ounces of meat daily with a moderate amount of starch and sugar.
>
> Diet for hard physical work:
>
> 50 to 70 calories of food per kilogram of body weight every 24 hours. Include foods high in carbohydrates. Use any form of wheat, sugar, cereals, beans, rice, hominy, prunes, raisins, dates, bread, potatoes. Seven ounces of meat daily.
>
> After 35 years of age eat less meat, fish, and eggs, and more fruits and vegetables (pp. 138, 139).

Other psychological suggestions follow. Do not overeat. Try eating malt sugar before hard work but avoid a hearty meal. If moderately weary at the end of the day, eat sugar in some form.

Never eat when angry or frightened. Eat slowly and in a quiet place. It is not wise or economical to discuss troubles at mealtime as so many American families do. Eat and digest your food in as pleasant circumstances as possible with lots of good cheer and sociability.

The significance of food habits for peoples in various climates and in different types of occupations is so important for their physical, mental, and emotional adjustment that it merits extensive research, not only in the study of the amount and quality of food, but also in facilitation of digestion and better distribution of mealtime intervals.

Haggard and Greenberg (1935) believe from their careful and extensive studies of nutrition that use of energy can be increased by more favorable distribution of food intake. Five meals a day are preferred to the old well-established habit of three meals a day. Muscular efficiency, productive power, and general well-being increase with the five-meal plan, provided the amount and balance of food are consistent with the body's needs. Factory operatives increased their individual productivity as much as 10 per cent by taking light mid-morning and mid-afternoon meals. Observations of several hundred individuals with varying mealtime habits, ages, and occupations indicate that five meals a day yield the maximum of efficiency.

Effect of Exercise on Efficiency

Exercise in some form has great value in maintaining a balanced tonus in the muscles of the body. Work and play are the two avenues through which exercise naturally takes place. When these channels are inadequate, formal exercises can be resorted to. Need for exercise is obvious when one must assume a muscular set or posture for too long a time, or when an unusual activity occurs during the routine movements of a day.

The play activity is one of the most beneficial and natural forms of exercise. Adult play occurs in the form of various sports and outdoor life. Adult relaxation which comes through play is due not only to the relaxation of large and small muscles through more evenly balanced activities, but to the removal of mental tensions and emotional strains connected with modern life. Play is indulged in for its own sake; it is free from conflicts and the ordered schedules of a working day and week.

Various theories of play stress its value for children as a preparation for adult forms of action; as an outlet for excessive energies; as a form of recapitulation of the activities of a species; and as a compensation for imaginative indulgence in activities. To these values we now suggest the one of self-control. The mechanization of all routine activities has made man a servant rather than a master of himself. He seeks play and the outdoors to assert his own freedom from continual restraint, to "feel" himself master of ceremonies, to exercise full control over self.

Life outdoors, where air and sunshine are absorbed; where one can "lose" himself in woods, by streams, and on the mountaintop; where solitude and quietness replace people and noise; where change of scene envelops one in a momentary feeling of security and peace; where no goal must be attained; these experiences and many others are play, they are relaxation, and glorious forms of exercise.

When sports and outdoor life are not available, then set up your own artificial code of indoor exercises in a room where there are open windows. Formal exercises practiced too long can be nervously exhausting, therefore discretion is necessary. Good, healthy posture resulting from a well-managed body is in itself a fundamental means of exercise conducive to the promotion of better efficiency.

Habits of exercise such as indoor calisthenics, walking to and from work, taking care of a garden, absorption in hobbies, recreation of various kinds, are signs of good health and buoyant personality. They advance one in the skill and art of being a well-integrated organism for the most economical release of energy and use of effort.

Questions for Yourself:

1. What circumstances have provided an opportunity for you to recognize your own degree of will power? When has environmental resistance been sufficient to force self-assertion and self-decision? What is your own ability in making decisions?
2. Recall your observations of the effects of caffeine, tobacco, or alcohol upon your own efficiency, or that of others. Why does an aviator leave tea and coffee alone, not smoke or "drink"?
3. Have you ever thought of regulating the amount and quality of your diet for better use of your energy? What guides are there for better control?

4. Cite cases from your own experience and observation of the extreme uses of exercise, either artificial or natural. Why is control of exercise essential for each individual?

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CHAPTER XI

CONTROLLING FEELINGS AND EMOTIONS

Many experiences come to us through sensations aroused by the stimulation of receptors. Each of these sensations has a characteristic physical design comprising receptor, sensory neurons (afferent), cortical or other central neural mechanism, motor neurons (efferent), and a response organ or organs. Each has definite qualities, such as intensity, duration, and clearness, which lend themselves readily to close inspection. However, accompanying these definite sensations there also may be a number of indefinite sensations which seem neither to arise from a specific receptor nor have a particular response organ. They do not seem to accompany definite sensations as their qualities, like duration, since they tend to change or disappear when closely observed. Moreover, such experiences themselves tend to possess some of the very qualities, such as intensity, of the distinct sensory experiences.

AFFECTIVE EXPERIENCES

Sensory experiences can be aroused by external stimulation, but affective experiences which we are now considering, depend largely upon internal or systemic stimulation. True, we may associate these experiences with something "out there," but they are primarily concerned with the bodily condition. These experiences are commonly classed in two groups as *feelings* and *emotions*. Warren and Carmichael (1930) would include sentiments as a third group of affective experiences, but others prefer to treat them as conditioned feelings or emotions which, through the influence of environment, have been combined or built up into various specific behavior patterns designated as attitudes, opinions, ideals, appreciation, and so on. They are what we have learned to feel about certain events, persons, or things, either singly or grouped into patterns within our environment. In short, they are mental habits with a large proportion of conditioned feeling or emotional reaction in their make-up.

Feeling or affection. The terms "feeling" and "affection" are synonymous when defined in psychological rather than popular terms. Both terms should be understood, since they are used in psychological literature. The terms "feeling" and "to feel" are commonly rather loosely used. Many experiences that are really sensations are called "feelings," as when you say "I feel pain," "I feel hungry," or "It feels rough." However, in psychology *feeling* refers to the conscious processes held to be quite different from sensations, although frequently accompanying them. It has nothing to do with sensations of touch that it does not have in common with every other sensation. For example, a very rough surface gives touch sensations of roughness but the feeling which accompanies the touching may be unpleasant just as an auditory sensation of successive tones may be a bit of music that produces in you a feeling of pleasantness as you listen.

This close association of feeling with sensation is emphasized by Gates (1929) when he discusses feelings with sensations rather than with emotions which they resemble more closely because of their affective quality. In classic divisions of psychology, feelings and emotions are considered in the same general sections.

Feelings may occur with emotions or quite independently when no emotion is present. Feelings have been identified with almost every mental activity, as well as treated theoretically as isolated unique experiences.

In general, you tend to avoid those persons, things, or situations which produce in you an unpleasant feeling, and to get or keep those which produce pleasant feelings. You may make no overt action to bring about such a result, however, although the feeling may be very strong and definite. The feeling itself seems like a more or less passive organic state which may or may not act as a facilitating or inhibiting agent for action toward maintaining the pleasant condition or eliminating the unpleasant.

Classifying affective states. There are a great many words used to designate different feelings and emotions. Jot down a dozen or two, like joy, wonder, excitement, love, pleasure, grief, and attempt to classify them according to some criterion. Although you can readily find dozens of words—Woodworth (1934) thinks that finding a hundred would be no great task—to describe how you feel, you will probably experience greater difficulty in classifying them into specific groups. A broad classification, which seems to find favor with many investigators, groups the various feelings into two broad categories, pleasant and unpleasant. Some reactions felt, however, are neither definitely pleasant nor unpleasant. These do not seem to indicate a third kind of affect as much as an absence of affect.

Landis (1934) sums up the consensus of investigators when he states that a definition of feelings as the experience of pleasantness and unpleasantness is still in good standing. That pleasantness-unpleasantness are elementary feeling qualities is maintained by some investigators, although this theory is challenged. There is considerable favor for the idea that, if all sensations from the body are rigorously excluded, the feelings can be arranged in a straight line from intense unpleasure to greatest pleasure. This would support the commonly held opinion that two different feelings or both pleasantness and unpleasantness cannot be experienced at the same instant. Even intense unpleasure which may accompany a painful tooth cannot coexist with a pleasant feeling produced by news of a much wanted honor. One fades or increases at the expense of the other, or they fuse and both become less intense. The pain may remain but its unpleasure be lessened, or it may alternate with the pleasant feeling and be disregarded for the moment. Whatever the physical basis of feelings may be, we know we have distinctly pleasant feelings which we seek to secure and maintain and others definitely unpleasant which we avoid whenever possible. On the whole pleasant feelings are most often associated with things and situations beneficial to the individual and the unpleasant are often considered detrimental. This is more obvious in untutored states than later when extensive conditioning has occurred. We learn to react favorably to many things which originally would have created an unpleasant or annoyed feeling, and likewise to ignore or find unpleasant many things which formerly satisfied.

Pleasantness and unpleasantness bear a close relation to amount and type of control the individual is able to exercise. As the individual matures, his innate tendency to direct energy is first demonstrated in the control of his own bodily and mental equipment, and next in the control of his environment in ever increasing ratios. Just so, pleasant feelings attach themselves to activities which are consciously controlled. Accomplishment carries with it feelings of power and well-being essentially pleasant in quality. Blocked or undirected activities carry with them a much smaller ratio of satisfactions, or more actual dissatisfactions, hence are associated with unpleasant feeling tones.

Our feelings, whatever their origin, are tremendously important to us personally and influence our behavior, particularly in social contacts. Since so many of our feelings have been learned, we must look to the design of our feeling habits as well as other mental habits in charting our lives for effective as well as affective living. The importance of feelings in our general well-being is no doubt equalled only by that of our emotions.

Emotion. From time immemorial the human individual has been cognizant of stirred-up states of his bodily and mental functions which made him feel and often overtly act in a quite different manner from his unstirred, routine, balanced, or mind-dominated existence. Such stirred-up states of feeling provide emotions. Frequently with organic disturbance there is overt bodily activity which is looked upon as an expression of emotion. This expression is susceptible to conditioning, however. We learn to conceal our emotions, or to use an expression usually associated with another emotion, in order to conform to social conditions or to mislead the observer. This expression of the emotion is the part of the reaction which may become a social tool. It is one source of a great part of the factual data about our emotions.

The bodily reverberations also have ever been of particular interest. Descriptions and introspective reports of what the individual thinks he is experiencing when he is angry or sad or amorous have given further data which provide a second source of information regarding the emotions. Literature, both prose and poetry, abounds in data of this type.

A third source of information regarding emotions is provided by study of the nervous system and endocrine glands. The neurologists and physiologists have provided us with the bulk of our data from this source. Many investigators are inclined to believe that we may ultimately explain emotions from exact knowledge of nervous and endocrine activities. Literature again indicates how diligently the author and the poet have delved in medical case histories.

THEORIES OF EMOTION

Attempts to explain and interpret emotional behavior have resulted in the formulation of various theories of emotion. For a great many years it was believed that the emotions caused the bodily reactions and activities characteristic of emotional behavior. The phenomena of emotional activity have been examined with special care by James (1890) in such situations as when one sees a frightening object and makes all the proper bodily reactions to get away from it, and then realizes, after the danger is past, that he is afraid. According to hitherto common belief, "You see the bear, are frightened, and run." According to James the order would be—You see the bear, run, and are frightened. This is also summed up in James' well-known paradox, "We feel sorry because we cry, angry because we strike, afraid because we tremble." James presented his theory in 1884 and a year later, Carl Langé, a Danish physiologist, presented a similar theory. The difference between the theories of the two men consisted mainly in the bodily changes stressed as the source of the emotional state. James maintained that visceral activity combined with peripheral activity produced the emotion, while Langé stressed the circulatory changes. However, the two theories were so markedly similar that they are now known as the James-Langé theory of the emotions.

According to Carr (1928) the difference between emotional and non-emotional behavior is essentially dependent upon the orderliness of adjustment. Control of energies is essential to orderly behavior. The rôle played by control in affective reaction is implied in the emphasis Carr places upon orderliness as a differentiating criterion of emotional behavior.

> To summarize, we may say that the somatic activities are continually being excited to react in an adjustive manner to the behavior demands of the organism. The emotional reactions are those that are awakened when the organism, temporarily at least, is unable to respond in an orderly and efficient fashion to a highly stimulating situation, and for this reason they partake of the nature of a somatic disturbance. The non-emotional reactions, on the other hand, represent a relatively coordinated and orderly type of somatic readjustment, and hence we may suggest that, contrary to orthodox opinion, it is the non-emotional adjustments that exhibit the greater degree of adaptive utility (p. 235).

Among physiologists, Cannon has been the most severe critic of the James-Langé theory. He has carried experimental work far beyond Sherrington (1906) and has demonstrated that activities aroused in viscera, blood vessels, glands, and skeletal musculature do not produce the emotional state as James and others contended. He has presented the Thalamic Theory of Emotions in which he stresses the importance of neural processes in the thalamus (diencephalon) in determining emotional behavior, rather than bodily reverberations stressed by James and his followers. In this theory, Cannon (1927) contends that "the peculiar quality of the emotion is added to simple sensation when thalamic processes are aroused." He also makes the further statement that these thalamic processes can be controlled by processes in the cerebral cortex. Therefore they are subject to conditioning just as muscular and glandular processes may be conditioned by experiential influences. This cortical control of thalamic processes, if true, also explains how we can sometimes arouse an emotion by assuming the attitude which the emotional state expresses. We assume an attitude and thereby remove cortical inhibition from the lower neurons, then, when the emotional stimulus (real or imagined) is presented, the emotional state is readily produced.

The rôle of control in emotional behavior. This possibility of control of the emotion-producing processes is important in determining our behavior pattern. We excuse unwarranted and unbecoming emotional expression because "we can't help it." In reality, we are not using possible inhibitions which the cortex can provide; instead, we are permitting lower neural centers to reproduce the emotional pattern to which they have been habituated. The poised, "even-tempered" person is one who uses cortical control in dealing with emotion-arousing stimuli, or whose habitual emotional behavior has been formed by directed cortical activity.

From a psychological point of view, this matter of cortical control is an exceedingly important one. As you recall, the tendency to control is inherent in the very structure of the neural mechanism of the individual. It is manifest in the precision with which cells arrange themselves as they are developed into the characteristic form necessary to produce the individual. In lower animals the physical structure is such that inner balance with environmental stimuli is automatically maintained. But when organization becomes more complex, relationships within the organism are no longer exactly supplemented by relationships in the environment. It is when this obtains that factors of control are no longer fixed and immutable, but become more and more a matter of conscious concern as the organization becomes ever increasingly more complex and specialized. Because man is the most highly organized and specialized type of living individual, he will have the largest gap to bridge between internal and external relationship systems, therefore more of the controls necessary to adjustment must enter consciousness. The more complex the organization, the greater the need to control the proportionally greater number of stimuli impinging upon it. The organism could not be made complex enough with a specialized protoplasmic relationship to adjust to all of them, hence the need for and the development of conscious control to aid in the adjustment.

The effort of the organism to bridge this gap between the state of relationship within and the environmental conditions of relatedness produces within consciousness an affective tone or an emotion. Unless this tendency toward control is strong enough to force itself into consciousness it does not produce an affective state.

Forceful stimuli may cause sensations which are so intense as to cause distress in the organism. If it is a matter of physical struggle for balanced relationships within, pain may be the only accompaniment of the sensations aroused, with possibly but not necessarily a feeling tone of unpleasure. However, if the sensations aroused by a stimulus are so overwhelming that no patterns of control can be marshaled, not even automatic and routine ones involved in locomotion or vocalization, paralyzing and abject fear may be felt. In this event physical disturbances, produced by blocked tendencies to control, emerge into consciousness as the emotion of fear. If the nature of the stimulus is such that individual security is threatened, the emotion of fear is felt in stronger or milder form, dependent upon the proportion of inhibited control tendencies.

There is a large element of the unknown in fear-producing stimuli. More knowledge may prevent inhibition of a different, perhaps larger, proportion of control tendencies, and the emotion is recognized as anger. The overt bodily activity which in the face of the large proportion of unknown factors in the fear-producing situation will cause the individual to get away from the danger, in the anger-producing situation with its larger proportion of known elements will cause the individual to stand his ground or go toward the threatening stimulus.

The security desired may be that of body or mind, property or position, or of relationship with others. The security sought may have grown out of some fundamental need or want, or have been attached to some learned or acquired desire. Security results from the balance or adjustment of control. What can threaten or disturb the adjustment is determined in large measure by the security aims we graft upon the fundamental urge to survive. We tend to forget the primary security aim and permit the secondary security aim or aims to dominate.

Within our bodies we have organized certain habitual relationships in our control tendencies which permit the organism to function as a more or less smooth-running whole. Disturbance of these relationships results in bodily distress or, if the sensory reverberations are of the right nature to involve the central neurons, an affective state is produced. Control tendencies resulting from activity in the central neurons may function as readily in our mental life as control tendencies arising from the energy of somatic cells function to keep our bodies developing and reacting in characteristic way. Ideas, images, and other mental concepts may become conditioned to be emotion-producing stimuli.

Group Emotion and Group Action

We are constantly acting as units of a group of other beings similar to ourselves. It is essential to recognize and if possible understand the contagious nature of emotional behavior. Self-control is heavily taxed whenever we are exposed to suggestion in groups and many of us tend to feel and behave as we see and hear others behaving. The contagion of fear was demonstrated in the recent depression. The contagion of patriotic sentiments is capitalized to promote and prosecute war. Altruism is depended upon to raise huge funds to care for the disabled humanity made by wars. On a smaller scale, wild enthusiasm of the crowd of spectators at a football game, out of all proportion to the intrinsic values at stake, demonstrates the same contagion of behavior. Starch (1934) emphasizes the prevalence and power of this contagion when he states:

> People act in masses, and are influenced by common causes. A characteristic of such mass emotions and mass actions is that they almost invariably go to extremes. Waves of fear or hope carry the mass to extremes in one direction today, in another direction tomorrow. And there may be neither precedent nor reason for either extreme reaction (p. 45).

Group emotion. The idea presented to a group by various methods which cause a few members to assume the emotion soon becomes the conditioned stimulus which can initiate the emotion in others, either directly or through imitation or suggestion. The individual gets a certain feeling of security from being with his kind and acting like them. An idea which at first seemed uninteresting, absurd, or just stupid may take on emotion-provoking aspects through observation of expressed approval-actions or disapproval-actions of near-by members of the group. As cortical control disappears lower centers permit the suggested emotion pattern to operate in the conventional manner to which the individual has been habituated. If the idea suggests fear, he reacts with the characteristic avoiding reaction by refusing to entertain the idea.

Group action. When individuals become members of a group or crowd they seem to lay aside cortical control and use only their lower brain centers and already established habit patterns of behavior. These patterns frequently have been established at the infantile or childish level of behavior, hence the primitive behavior displayed by mobs. Persons who "lose their heads" in a crowd are acting without cortical control and depending upon their emotional or other behavior habits. Usually these habits are inadequate to maintain the adult level in behavior, particularly when reinforced by suggestion from others acting in approximately the same manner. How modern methods of communication keep us constantly exposed to suggestions from the behavior of others is implied in another quotation from Starch (1934):

> Mob action can occur only where the individuals of a group are aware simultaneously of the same action. Wider reading of newspapers and magazines, growing use of telephones, telegrams, and radios provide the condition favorable to swifter group action. Individuals widely separated can now participate in mob action as readily as if they were physically together (p. 176).

Methods of Measuring Emotion

However important the bodily state may be, the recognition of a subjective emotional state, as anger, love, or joy, is essentially a mental process. The bodily patterns may be very similar for several totally diverse emotional states, yet we know definitely whether we are afraid or angry, and we show our reaction to others in various well-known ways. Careful analyses of tissue states, of blood sugar content, of dioxygen production, of heart beat, breathing rate, and so on, in relation to emotional activity have as yet yielded little in the way of specific information as to the emotion itself and its place in our total behavior pattern. Therefore for the moment, we need concern ourselves little with the autonomic nervous system and its apparently important part in our bodily functions and supposedly through them, in our emotional states.

Objective indices of emotional expression. Considerable data are extant regarding recognition of affective states from their expression through observable activity of facial muscles, bodily movements, blushing or flushing, verbal utterances, laughing or crying. Cues for recognizing emotional expression are learned just as cues for words and ideas are learned in reading. Affective expression functions as a supplementary pantomimic language which we learn to use and understand as readily as we do spoken language. It is acquired earlier and has more elements of universality than spoken language, hence may be used when individuals with different languages meet. Since facial expressions have long been accorded second place to vocal expression as indicative of finely differentiated reactions, it is not surprising that a number of investigators have attempted to recognize the specific emotion from facial expression. Again we find anatomy and physiology giving the first scientific basis for investigation of facial expression.

Sir Charles Bell in 1806 published his *Anatomy and Philosophy of Expression* in which he stressed the importance of anatomical relationships in the expression of emotion. His idea of bodily expression as a basic fact in emotional states was later emphasized by Darwin, James, and others. Darwin stressed the biological usefulness of various facial expressions, such as the bared teeth showing readiness for effective biting. He also emphasized the concept of release of neural energy over innate pathways which would tend to present characteristic emotional expression. He also suggested the idea that opposite muscular reactions may present opposite emotions, such as the lowering of the brows to scowl in anger and raising them to smile in joy.

Duchenne in 1862 presented his thesis that emotional expression depended primarily upon the activity of single muscles. Later investigators tend to show, however, that facial expression is too complex to be related to single muscles. In 1902 Frappa published data in support of his suggestion that facial expression may be reduced to the three basic expressions, joy, grief, and astonishment. Other facial expressions could be built up from these three fundamentals. Dumas studied Frappa's material and in 1923 published data which showed that the three primary expressions are easily explained in terms of neural function. Heightened tonicity of the muscles of the whole body, including the face, is evident in expressions of joy. Sudden contraction of facial muscles, especially those surrounding the eyes, give rise to the expression of astonishment. Grief is shown by relaxing of muscles and consequent lowering of tonus of muscles contracted in expression of joy. The heavy masseter muscles contracted in smiling are relaxed in grief, and so on. But again we note that the same physical manifestations may appear in widely differing emotional reactions, hence a point for point relationship between activity and emotion is difficult to establish.

As has been noted, infant behavior tends toward a large amount of generalized or mass activity from which specific or particular pattern actions evolve as control becomes better directed. As the individual matures, more complex patterns can evolve. This is true also in emotional behavior. A child may present relatively few emotional patterns, but as maturation progresses the patterns become more definitely specific and increase in number. Whether or not such patterns are sufficiently differentiated for the different emotions to be recognizable in their overt manifestations is the concern of a fairly large group of investigators. Most of the work has been done with facial expression, although bodily posture and use of limbs, particularly arms and hands, have come under observation, either as separate units or in connection with facial expression.

In experimental work, photographs or artists' sketches of persons experiencing or simulating various emotions have been used as a means of presenting the expression of emotions to many people for their recognition. Feleky (1914) presented the idea of recognizing emotions from photographs with her series of pictures posed to express the whole gamut of emotions, which she hoped various judges would agree were typical of specific emotions or emotional situations. Considerable disagreement was evident among the judges as to the particular emotion depicted. Greatest disagreement occurred for the pictures presenting anger, suspicion, fear, hate, rage, and religion. The expressions of disgust, sneering, and breathless interest were judged correctly more often than the others.

Langfeld (1918) used artists' sketches of posed emotional expression for a similar experiment. He found that fear and anger were confused, also suspicion and surprise. Laughter was usually interpreted correctly. He also found that contempt and scorn expressions were more often interpreted correctly than any other. Others have carried out similar experiments and have obtained essentially similar results. Later experiments have emphasized the total configuration, the whole face, the whole figure rather than specific muscles as essential for more accurate judgments. Knowledge of the social expressions of emotions also aids in making judgments more accurate, as does knowledge of the emotion-stimulating situation. Sherman (1927) studied the recognition of emotional responses of infants by showing them to students and nurses, and found definitely that little reliance can be placed upon the judgments of either trained or untrained observers in naming specific emotional expressions. Only when knowledge of the emotional situation (falling, hunger, restraint, pain) was available was the judgment somewhat better than pure guess. Gates (1925) studied acquisition of skill in interpreting facial expression. Children of different age levels were asked to judge the expression depicted in various photographs. She found some increase in ability with increase in age, but at best the interpretations were far from perfect. Her work emphasized that ability to discriminate differences in facial expression is largely a learned social response. Landis (1924) found among other things that there is a tendency for subjects to have two or three facial patterns which are used for all situations.

It would seem then that facial expression as an index of emotion is not an accurate means of identification, since such expression is so frequently a socially conditioned response. However, within similar social and other homogeneous groups where conditioning will probably follow similar lines, it is possible to acquire a fairly high degree of accuracy in recognition of facial expression in emotion, particularly when the emotional situation is known to the observer. It is well to keep in mind that investigations reported of studies of facial expression have been by and of Occidentals, and may not hold for Orientals.

Vocal expression also seems to be an index of the specific emotion only when we have learned to recognize the specific vocal pattern as such. We learn rather early to associate a loud, explosive vocal ex-

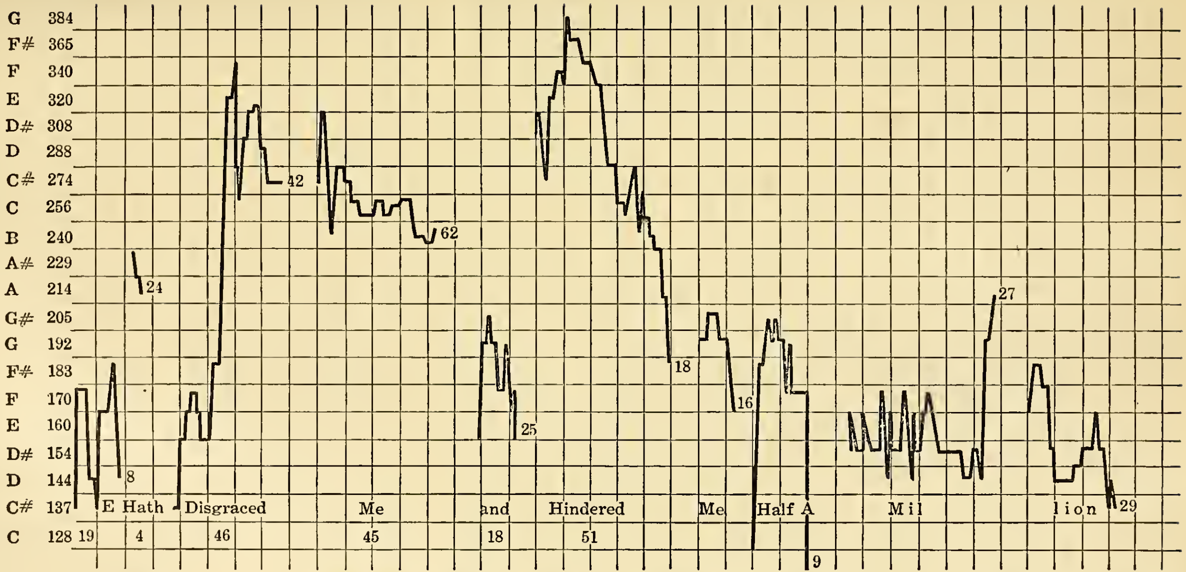

FIG. 33. Inflection of voice in affective speaking. Changes in pitch of voice measured by phonophotographic methods from a phonographic record of E. H. Sothern's rendition of Shylock's speech in *The Merchant of Venice*. From G. N. Merry, 1922, p. 216.

pression with anger; a trembling, uncertain voice with fear; or low, caressing tones with love. Seashore (1928) and his coworkers have pioneered in bringing phonophotography to aid in furnishing objective data on vocal inflection as an expression of emotion. The variation in pitch to express emotion is shown in Fig. 33 on page 247, as studied by Merry (1922) in the analysis of speech inflection by the phonophotographic method. The variation in pitch of the singing voice to express emotion is indicated by the vibrato, referred to in Chapter XXIV. Whether or not the speaker and singer actually feel the emotion they express by vocal inflection, we have learned to associate such changes in tone with certain affective states.

The radio has brought increased importance to the voice as a means of communication, yet one need listen only a short time to a radio speech to realize how inadequate the disembodied voice is to convey emotion. Inventors are working to perfect television, because in life situations we rarely are trained to judge the emotion from an isolated voice without other cues to aid us in interpreting emotion expressed by voice and facial expression. The keen observer familiar with characteristic emotional behavior patterns conditioned by social setting, education, age, sex, and so on, can reach a high degree of accuracy in identifying the emotion present if he has a sufficiently large number of cues to use in forming judgments. We become expert in reading the emotional cues of those with whom we are intimately associated.

In experimental work it was noted that laughter most often was interpreted correctly. It is a direct spontaneous primitive reaction that serves as a satisfying release of energy. The joyful laughter which comes from euphoria and a bubbling over of good humor is particularly common with children. The adult rarely has the carefree well-being to enjoy this type of laughter to the full. The comic laugh *at* something incongruous or funny seems to be experienced more often than the joyous laughter of sheer good spirits. Laughter appears to be a kind of universal language which we can interpret with the help of supplementary cues and thereby know how our associates react. Laughter is amazingly contagious and is an excellent tool in the control of self and groups. A hearty laugh is often excellent medicine for a depressed or terrified feeling. The smile may be an expressive emotional response pattern like laughter, but perhaps more often it is an adaptive social response used as another means of communicating with others. Washburn (1929) found in her study of infants during their first year that laughter was always the more stereotyped pattern of response and smiling was a conditioned or learned response to a markedly greater extent.

Tears either with or without crying are objective manifestations of an affective state usually brought about by conflicting tendencies or released tension in emotional states. Tears may accompany so many emotional situations that they may be looked upon as another supplementary language which we must learn to understand as we do other cues to behavior. We usually associate tears with a failure of adaptive mechanism to meet the demands of the environment. They frequently come at the end of stress and with exhaustion of nervous energy. Some persons control their lachrymal apparatus so well that they can turn on tears in any situation where they think tears will gain their ends. Many of the emotional behavior patterns to which we have become habituated have tears as an integral part of the picture. In this reaction too there are wide individual variations, and learning has played a large part both in determining and recognizing its patterns.

If you have gained the impression from this discussion of the objective expression of emotion that precise methods of judging such expression are not yet developed, you will not be far wrong. Racial cultures and social factors modify the form of expression to such an extent that innate patterns, if existent, are too concealed or disguised to be recognized readily.

Organic activity as an index of emotion. Measuring glandular, visceral, and neural activities has given us much interesting information, but little of it can be definitely classed as a measure of such and such an emotion. We may turn pale with fright or with anger, flush with pride or with embarrassment. Adrenalin is poured into the blood stream in many different emotional states, or when no emotional activity as such is present. The "lie-detector" by measuring the systolic blood pressure or the psychogalvanic reflex of the skin, if coupled with sufficient number of other clues, eventually may be the means of separating falsehood from truth, but there are still too many chances of error for much dependence to be placed upon it. The circulatory and respiratory changes add their bit to precise knowledge, but as yet no one method is sufficiently informative to give detailed description in a limited introductory text. It is sufficient to call attention to the existence of this type of investigation so that you may be aware of it and ready to recognize its contributions to an understanding of human behavior as they are made.

The questionnaire method of investigating emotional and feeling states has also yielded varied data, and when properly used and understood can give valuable insight into the affective adjustment and stability of the individual. Woodworth (1920) was among the first to investigate emotionality by this method. Thurstone, Pressey, and others have devised other inventories which give more or less informative data. The questionnaire method is expected to yield information regarding the whole personality of the individual. Emotional behavior is very important in this picture of personality, therefore such inventories need to contain a large proportion of questions that will bring forth information about affective states.

The association test has long been a classical experiment in psychology. Cattell's work in association nearly a half-century ago anticipated or laid the foundation for much of the work of later investigators, many of whom were his students. In the free association test referred to in Chapter V a list of stimulus words is given, to which the subject must respond with the first word which comes to mind. The critical words are scattered among indifferent words and the responses to these critical words and the general behavior of the individual when responding are all carefully studied. The test may be designed to test emotionality or detect emotions. In this case the response to the critical words is studied either to detect specific complexes or viewed as a whole to secure an index of the total emotionality. Unnatural or far-fetched responses, forced avoidance of relevant or usual associations, long or variable reaction time, and avoidance of previous responses in repetition of the test, are considered among others as diagnostic responses.

In order to interpret responses to an association test it may be necessary to know what response is given normally. Kent and Rosanoff (1910) investigated normal association when they asked one thousand persons to tell the first word that came to mind in response to each of one hundred words read to them. A few of the stimulus words are given to show the nature of an association test, together with the typical response word and the number of people in one thousand who gave that response.

Stimulus Word	*Response*	*Number per Thousand*
man	woman	394
black	white	339
blossom	flower	467
eagle	bird	567
lamp	light	650

The free association technique is usually used with breathing, blood pressure, and psychogalvanic reflex records. Used alone it is more useful in giving the psychologists hints to be followed than supplying proof of the contents of the subject's mind. In the hands of an experienced investigator it can be used to "lay bare the mental life in a way that is startling and not always gratifying," as Cattell suggested long ago. Through well-designed association tests we may discover our mental habits, emotional conflicts, and so on, and subject them to intellectual inspection. Through such a preliminary analysis habitual behavior may be made amenable to control or change where necessary or desired.

DEVELOPING CONTROL OF EMOTIONS

Investigators seem to agree that emotions in the middle ranges of intensity usually best serve the organism. Too faint and indefinite affective tones make for a colorless uninteresting personality, while too violent ones contribute to unstable or abnormal reaction. Extreme fear, violent rage, unbridled lust, take their quota of energy which might better go toward more effective activity. This is particularly true of conscious states known as emotions of fear and anger which accompany mobilization of organic reactions for violent or prolonged physical activity. Uncontrolled affective states engendered by or accompanying activity of hormones produced by sex glands may be as devastating to well-ordered existence as uncontrolled fear or anger. With adulthood, conscious direction of activity becomes increasingly important in maintaining balance between inner and environmental relationship systems. Since affective states play an exceedingly important rôle in determining this balance, any direction or control the individual can exercise to bring his emotions within the range of moderation necessary for effective performance of daily tasks will be to his advantage.

Bodily activity is an exceedingly important outlet of emotional energy. A stirred-up bodily state tends to disappear or be converted into a more satisfactory form through bodily activity.

James understood this when he gave the wise suggestion, "When you have a grief, do something worth while that you probably would not otherwise have done." The activity must be sustained long enough to distribute in some orderly response the energy generated because of the emotion. Another selection from Carr's (1928) report describes this tendency and suggests a means of controlling our emotional reactions by directing them into orderly activity.

> An emotion gradually subsides and finally disappears as the organism begins to respond to the situation in an orderly and methodical manner. Our anger soon cools and wanes as we settle down to the fight, and terror no longer holds us in its grip as our precipitate and hasty initial efforts gradually become organized into an orderly and effective flight. The athlete is likely to become excited as he prepares for the race, but this emotional excitement soon subsides as he settles down to a rhythmical pace. The somatic reaction does not disappear in these cases. It merely loses its tumultuous and chaotic and emotional character as it becomes adjusted to the demands of orderly action (p. 234).

Education and training of the emotions. Some persons depend upon the same emotional behavior pattern at twenty which served them well at ten. The rage displayed in a temper tantrum at four is often manifested in a similar tantrum at forty, but with vastly different results. Reëducation for the transformation of certain emotional habits is often the essential element in successful adjustment. Fortunately, many of us are able to reëducate ourselves through our own efforts, and more of us could do so if we cared enough to make the effort.

The most successful studies in emotional reëducation thus far have been made with children. Franz (1924) reported some success with adults, but the situations are so much more complicated with adults that the simple, more easily controlled experimental procedure effective with children often is not applicable. However, as attention of investigators is directed to this vital field of psychology we may expect more effective techniques to be developed. Jones (1924) presents an interesting attempt at reëducation of undesirable emotional reactions in 70 children from three months to seven years of age. These children all showed fear reactions to situations and things which did not ordinarily elicit fear. Seven methods of treatment were tried, such as disuse, verbal appeal, negative adaptation by familiarizing the child with the presence of the feared object, repression through ridicule or scolding, distraction of attention while feared object was present, direct conditioning by associating the feared object with some pleasurable object (candy, food), and by social imitation stimulated by seeing others play with and enjoy the feared object. The last two proved most effective with this group of children. The other methods could not be relied upon. Negative adaptation sometimes produces a summation fear more violent than the original one. Forcibly carrying a child into the sea may only reinforce the original fear reaction to water instead of making him indifferent to it. The first five methods indicated may, however, be used sometimes as supplementary methods to reinforce others.

Wagoner (1933) sums up her chapter on the mastery of emotion in children with the paragraph:

> While increasing experience enlarges our capacity for understanding, it also increases the possibility for emotional responses. Since intelligence seems to have but little effectiveness as a means of preventing emotional outbursts, protection against being swayed by the emotions lies in building up stability through physical vigor and through habitual attitudes which will guard against the development of overwhelming or undesirable emotional responses (p. 158).

The adult who finds it difficult to adjust to his environment would do well to give his habitual responses a rational overhauling to see wherein the patterns they present are inadequate. Intelligence can be used both in recognizing the behavior responsible for the maladjustment and in devising and developing the pattern for correction. Help from others may be necessary, but making the new behavior pattern habitual and routine depends upon the effectiveness of control exercised by the individual himself.

Emotional maturation must keep pace with maturation of body and mind if a symmetrical personality is developed. Infantile emotionalism in an adult body is as pathetic as a child mind in a grown man or woman. Attempts on the part of adults to carry adaptive behavior, which was effective in an earlier environment, to a later environment in which the same behavior may be distinctly harmful, may result in nervous disorders which prevent him from taking his rightful place in the adult world. However, the point emphasized is that affective behavior need not remain infantile in its pattern, but can reach adult levels with maturity.

Developing, guiding, and controlling emotions. The following points are summarized to emphasize their importance in the development of adequate affective control. The suggestions and statements are general ones applicable to all affective conditions, whether milder feelings and sentiments or more disturbing emotions. These statements may serve as aids in the formulation of your personal rules for developing, guiding, and controlling your affective states, particularly your emotions.

(1) Affective states are rooted deeply in somatic structure. This close relation should be recognized so that you can understand and emphasize the importance of healthy body cells of every type as basic to any rules of behavior you may make. Reactions from unhealthy nerves, glands, and muscles are more uncertain and unpredictable than from those in a healthy condition. Therefore make it your first rule to establish and maintain a healthy condition of all bodily structures.

(2) Affective behavior may be conditioned and become habitual quite like any behavior. Make it your second rule to establish right emotional habits that will help, not hinder, effective living.

(3) Habits of control are necessary to accompany habitual affective behavior just as for other habitual behavior. Poise, assurance, and forcefulness are particularly dependent upon the control exercised over emotional behavior. Therefore the third rule should be to develop poise through habits of emotional control.

(4) Emotions tend to become useful in proportion to the amount of aroused energy which is directed into ordered activity. Orderly activity tends to be non-emotional and more readily directed and controlled. Whistling to allay fear or counting ten before speaking the angry word are small-scale examples of ordered activity tending to resolve emotional energy into more useful channels. The fourth rule may well be to control emotional energy by resolving it into ordered activity.

(5) The higher cortical centers can be brought into use to control affective behavior. When you "think through" or analyze an emotional situation, you eliminate its disturbing aspects by orderly mental activity just as you are able to do with orderly bodily activity. Emphasize the importance of mental activity by making your fifth rule the control of emotions by orderly and clear thinking about them.

(6) Emotional behavior should develop and mature with increase in chronological age just as the body itself develops and

matures. Emotional activities need training quite as much as mental activities. We are probably no more prone to learn the right emotional pattern accidentally than we are to learn to read or to cook our food properly without training. The sixth rule should, therefore, be to train the emotions so that emotional age corresponds with chronological age.

(7) Expressed feelings and emotions are contagious. The apparent security offered by numbers makes you more readily susceptible to emotional stimuli, particularly those closely associated with elementary wants. A guide to follow if you want to lead rather than "run with the pack" is to make it a rule to control your behavior in crowds and direct it into intelligently chosen orderly activity.

(8) Affective experiences are essential to the enrichment of life, but emotional extremes tend to lose their effectiveness to aid in this enrichment. Let your eighth rule be to have many affective experiences well within the bounds of effective moderation.

Questions for Yourself:

1. What emotional skills aid you in adjusting to life situations?
2. How can an emotional habit be transformed?
3. Why does ordered activity relieve the stress of a highly emotional situation?
4. How does your emotional age compare with your chronological, or educational age?
5. How easily do you succumb to the contagion of mass emotion?

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CHAPTER XII

BEHAVIOR OF SELF IN SOCIAL CONTACTS

Other human beings become important in your social environment the moment you are born, and continue to condition your behavior until you die. You are a social unit as well as an individual, and your problem is one of getting along with other human beings. As an intelligent person you have the responsibility to pattern competently your behavior, which in social situations is largely reciprocal, so that you may adjust comfortably and effectively to the exigencies of living with your kind. How to control your behavior to meet this responsibility is a psychological problem that you begin to solve in the social environment provided by the family group.

Behavior in Family Environment

The family is the most intimate and important social unit in civilized living. As children we are part of a unit formed by others, when mature we may become part of another unit which we ourselves establish. Thus, we spend a considerable part of our lives as integral parts of a bona fide family, or a substitute group of less closely related individuals functioning as a family, which will have a unique familial relationship provided by no other group.

Living together in the family provides opportunity to learn the techniques necessary for successful social adjustment. We learn routine ways of responding to other people much as we learn habitual ways of working or thinking. If these ways are right social habits, they make social contacts easier and more successful, just as right work habits lighten work and make it more satisfying. Therefore we add valuable assets to our equipment for satisfactory living when, according to Dennis (1934), we learn "the important art of maintaining successful happy relations with others under varying conditions." She emphasizes the acquired nature of social behavior when she writes:

> Successful relations with others do not just happen. Even when a person has some understanding of the difference in people and some

knowledge of how successful, happy relationships are maintained, it may take considerable time and practice before he becomes skillful in getting along with others in all circumstances.

The ideal family provides all members with opportunities to develop social behavior patterns that will serve them well in adjusting not only to the restricted home circle but also to the larger social scene in the world outside. Whether or not the family environment is near or far from the ideal, within its influence children lay the foundations of behavior patterns many of which will persist throughout life.

Social and other relationships among members of the family are constantly shifting and changing with the passing of time. Parents change as they grow older quite as do children. Economic conditions, educational levels, skills, interests, and many other factors both within and without the home vary from person to person as well as from year to year. Adjusting to these various and often conflicting phenomena is a major problem for each member of the family.

The behavior conducive to adjustment for happy human association within the family as well as elsewhere may be described in various ways. A list which readily comes to mind would include such descriptive words as thoughtful, understanding, considerate, coöperative, responsible, dependable, honest, just, admirable, self-controlled, patient, courteous, mannerly, orderly, cleanly, friendly, generous, cheerful, kind, affectionate. A list of the opposites for each of these terms would describe behavior which produces friction, unhappiness, and maladjustment in social relationships. How does your behavior within the family circle compare with the types suggested? Understanding how favorable and unfavorable patterns of behavior develop may aid in changing them for better familial adjustment. Since we each began social existence as children, let us first examine childish behavior in the home environment.

Child behavior and the home. The child's innate tendency to control extends very soon from his own body to the objects in the environment. If those objects are people who let the child's tendencies develop undirected or uncontrolled the child may develop selfish, headstrong, domineering patterns of behavior. He may become thoroughly self-centered and interpret everything in terms of personal benefit. Without doubt he will carry these undisciplined behavior patterns into the wider social scene where he will meet the force of opposing wills, the rights of others, the laws of custom, and responsibilities he cannot evade. He will be forced, often at great personal pain and effort, to learn the lessons of self-control for coöperation which he could have learned more easily under more considerate parental discipline. The overindulged child who does not learn the lesson may become the antisocial adult, the slave driver of the market place, or the inmate of Ward 10 escaping into a world of his own fancy. He may even marry and become the dominating head of the overstrict, stultifying home which also produces its antisocial creatures by crushing or twisting into unnatural channels innate tendencies to control activity for personal satisfaction. The overdisciplined child too has his behavior patterns to remake when he leaves home. Again the prison, asylum, hobo jungle, and unhappy home attest to the failure of many to make the transition. Somewhere between the two extremes there is a golden mean which allows enough freedom for full individual development, yet does not neglect the helpful discipline necessary to direct childish activities into useful, satisfying behavior—behavior which the individual may not have the knowledge or insight to recognize as either useful or satisfying. Successful parents come close to this golden mean.

Most homes are a combination of both favorable and unfavorable features. The favorable features encourage members to develop in characteristic pattern, the unfavorable ones also may bring forth latent powers to adapt both the individual and his environment to human wants and needs. Then too, one must not forget that good environmental features for one individual may not be good for another, and influences which may be rated bad may actually stimulate good behavior in a strong person. Environment, although important, is only part of the picture. The individual may have innate tendencies which he cannot change or natural deficiencies which he cannot supply. A poor environment may challenge the individual born with many talents and crush the one born with few. The best and richest environment, although it cannot make the individual with but one feeble talent wise or effective, may give him the effect of competence. If he is stripped of his environmental trappings, he stands exposed as the weakling he is by original nature, but if he is kept in his favorable setting, his weakness may never appear. The person richly endowed with inherited talents can develop best in a favorable milieu. However, ability does not always need the fires of adversity to assay good metal from dross, although adversity may have that effect.

In the home, or the social institution substituted for it, we develop patterns of self-reliance and independence in thought and action, or of timidity and dependence; we become colorful, unique individuals or pale replicas and poor imitations of someone else; we follow others through coöperation and understanding, or through weakness and ignorance; we learn to pull our weight in the common boat or rest on our oars and let others drag us along; we pattern our way by laughter and good nature or by tears and sullenness; we learn to play, or to stand on the side lines; we learn to meet defeat without whining and success without gloating—in short, home is where we set our patterns well or badly to work and act and play like human beings among other human beings.

Many adult difficulties in social adjustment can be traced to badly skewed patterns in childhood, or attempts to carry patterns adequate in childhood into adult activity where they no longer fit. If weeping aided us to gain our desires in the home, we weep to gain our ends in an outside world. If we fail we blame the world and not our wrong social technique. We may lie and falsify unnecessarily because as children we did not learn to separate fact from fancy, or we found lying useful for the moment to deny responsibility for our acts. Now we cannot keep our accounts straight and overspend our allowance because as children we did not learn to value money in terms of work and effort. We must go out into the market place for our amusements because we have not cultivated resources for entertainment within ourselves. Because we wind our affections too closely about mother and father, brother, sister, the comfortable living room, the good food, or the family car, we are miserable when we must leave them for college, business, or marriage.

The social problems vary with each individual; they are different for an only child, second, third, or youngest child. They vary for sons and daughters; adopted children, and foster children; rural, and urban children; bright, and dull; healthy, and unhealthy; bold, and timid; rich, and poor. The favorable behavior patterns learned in the family environment are legion, but we placidly expect them to happen and accept them as our due. Therefore they do not demand our attention as do adverse behavior patterns which present conflicts to untangle, and problems to solve.

Adolescent behavior and the home. As infants and children we found our parents quite acceptable, and our homes entirely adequate to our needs. Then, sometimes suddenly, with the coming of adolescence everything seems to change. We become strangers to ourselves and to our families. The worn carpet is a personal and distressing affront, father's shirt sleeves and mother's bridge club become "frightfully crude" or "just too quaint." Home is a place to start from and come back to if no other place is open, where parents lurk with strange, old-fogy notions about propriety and manners and peculiar ideas about wanting to use the family car now and then. We try desperately to stretch childish behavior patterns to meet new grown-up demands, and are unreasonably distressed when they fail us. We become agonizingly conventional in manners and dress and slavishly follow the dictates of our set even at the expense of good taste and decency subscribed to in lucid, more self-controlled moments. We are grown up, we are modern. We giggle, scream or yelp to make the world "look at me," and try to cover our vacuity with slang, smart phrases, wisecracks, profanity, or a "line."

This is the more disturbing picture of the adolescent trying to make the transition from childhood to adulthood. Many of us make the change more easily. We have learned to direct our activity through self-reliance, thinking through a situation, with confidence in our own ability or in that of some understanding older person. These, however, are abilities which must be developed before the hour of need. They are of slower growth, shaped and integrated through the process of growing up.

Courtesy and manners assume new importance in adolescence. Correct ways of behaving in social situations become more than onerous rules imposed by overexacting elders. Good manners are sought and practiced as lubricants for the social machinery. Courtesy, the consideration of the rights and privileges of others, gives to manners and social customs new meaning for the adolescent who is able to observe and think. Courtesy and quick perception of what other people do can be woven into behavior patterns that will carry one comfortably through any social situation, even when knowledge of the current manner is lacking. Manners not based on courtesy and consideration are temporary and acceptable only to a small group. John, honking the rasping horn of his roadster, today may find Susie galloping to his side in grateful appreciation of his crude attentions. Tomorrow he may find a more grown-up Susie receiving him sedately within the family home. Such are the rapid changes in Susie and the social rules under which she lives. The Johns and Susies may adopt for a time an uncouth, crude pattern of behavior to assuage the sense of insecurity engendered by their awkwardness and ignorance, but when mind and emotions mature, the gaucheries of youthful behavior normally are discarded.

For years people seem to have had the idea that only women needed instruction in correct behavior, if one may judge by the number and type of books on social behavior. Today, with drastic changes in the social order, it is significant that books on social behavior are being written not only by men but *for* men. Stevens (1934) has written such a guidebook on etiquette for young men in which he suggests, among other things, that when young men are in doubt as to the proper social conduct, they should follow the dictates of "common sense, decency, good taste, justice, and kindliness." The rules governing well-mannered behavior are simple and well within the ability of anyone who has learned self-control. In general, the rules concern the likes and dislikes of people. The rules telling what not to do are associated with such dislikes as repulsive and obnoxious bodily odors, sounds, or appearance; annoying or disgusting mannerisms such as picking the nose and introducing the fingers into other bodily orifices; raucous voices; profanity and conversation attesting to a filthy or vacuous mind. The rules telling what to do are associated with the likes of people such as the cultivation of attractive appearance, neatness in dress, good taste and skill in conversation. A rule which applies equally to every member of the family is to behave toward each other with as much courtesy as one would show toward others outside the home circle.

Courtesy and good manners integrated in habitual patterns of behavior ring true and are serviceable in smoothing and facilitating social contact. This is equally valid for both sexes. Discourteous and ill-mannered ways of acting are handicaps which make social adjustment inferior and difficult. Thus the youth or maiden who has learned and practiced the essentials of courtesy and good manners within the family circle has psychological equipment that will promote self-confidence and make social contacts pleasant as well as easy.

BEHAVIOR TOWARD OPPOSITE SEX

Fortunate indeed are the people who have grown up with brothers and sisters and from infancy have learned to meet the problems of living in a world of both sexes. More fortunate, if they have learned that they are first of all civilized human beings and their sex is a characteristic secondary in importance to their humanness. Important as sex may be, it is primarily a bodily function subject to cortical control and environmental conditioning. The fact that sex to produce its ultimate effect, reproduction, necessitates the coöperation of two people with the required somatic organization makes of it a social matter, hence of different psychological as well as physiological import to the individual than is digesting food, breathing air, or drinking water.

The dictates of social good taste demand a decent reticence in matters of sex quite as much as for other physiological processes. Such reticence does not mean being excessively prudish, but it does mean regarding bodily functions in proper perspective without attending to them excessively in conversation and thought. The importance of physical aspects of the sexual function may be easily exaggerated in thought and action and interfere with the development of behavior patterns favorable to effective social adjustment. Well-designed attitudes toward sex are essential to comfortable association with the opposite half of the human race.

Sex likenesses. Certain fundamental sex likenesses are usually disregarded when attention is focused on differences. Physical differences do not imply mental differences as is so readily assumed, nor do differences imply inferiority. This common but none the less faulty logic may easily influence behavior toward the other sex.

Point-for-point comparisons between men and women of both anatomical structure and physiological function yield a higher ratio of similarities than of differences. Secondary characteristics dependent upon sex show the most difference, are the most obvious and observable, therefore are noted, while the similarities are taken as a matter of course. In mental activities and abilities, too, there is less difference than popular assumption has led us to believe. Measurement and experiment have given us many data, but much more authentic information is necessary to counteract the huge volume of misinformation extant regarding the two sexes. It is already well established that in many factors there are greater variations from man to man and from woman to woman than the differences between the averages for men and the averages for women. That behavior has been forced into different overt action patterns for each sex does not deny basic human likeness. Some investigators tend to ignore or resent this emphasis on basic humanness, while others are equally extreme in denying differences. Both types of extremists confuse function and kind.

Allport (1933), after examining the stereotyped trend of thought and available factual data, states his recognition of the essential similarities between men and women in the following cogent statements.

> In the present state of our knowledge the assumption that there must be innate psychological differences between the sexes seems to me quite gratuitous. There is also no good reason for assuming that the sexual basis is a more potent factor in the personality of women than in that of men. That these questionable views are widely and tenaciously held is an interesting fact. . . . I do not say that it is certain that no important innate sex differences exist; but only that the evidence for them thus far submitted is unconvincing. Barring the primary and secondary physical characters of sex, men and women are strikingly similar in their biological make-up. Since, moreover, they are descended from the same parents and the same ancestors, their mental traits are probably inherited from both father and mother. On the whole, therefore, the hypothesis of fundamental psychological similarity is quite as reasonable as that of basic difference, and probably safer, since, generally speaking, that hypothesis is best which assumes least (p. 359).

Sex differences often are learned and social rather than actual. Even the matter of physical strength is assuming less importance as women learn to extend their strength with the same tools which increase the powers of men. Machines are not sex-conscious. An automobile will reach its destination with quite as much precision and dispatch under the guidance of a competent woman as under that of a competent man.

Through knowledge and a clearer understanding of the physiological processes of reproduction, women are making some progress in considering their part in the propagation of the race with less emotional and more rational thinking. The psychological concomitants of motherhood and fatherhood are yet none too well comprehended by either sex, influenced as they are by habitual thinking based on old wives' tales and superstition rather than factual data and understanding.

Boys and girls brought up together from infancy are more ready to understand and regard each other as persons, provided, of course, that sex antagonism and misunderstanding have not been fostered by parents and other adults responsible for home conditions. From earliest infancy boys and girls are put into different social conventions just as they are swathed in pink or blue. They pattern their behavior by that fostered and demonstrated by the adults about them, particularly in the home. Even when maturity brings the responsibility of setting their own patterns, these infantile conditionings persist and often appear in peculiar guise to influence attitudes and behavior toward the opposite sex.

Conventional behavior. History can function principally through conventions. This training in conventions is important in converting individuals into socialized beings. Each person is a part of a social pattern which is not fixed and set as it is for the subhuman animals. Their natural inhibitions, which seem to function to keep them within their simple, conventional patterns of behavior learned early and followed with little change until death, are lacking in human beings or are too weak to be depended upon to act in a sufficiently uniform manner for social development. Therefore human beings need training in self-control as well as in conventional conduct in social relationships. Under stress of emotion and erotic stimulation, the best training may fail to direct behavior along lines the group has found acceptable. Attitudes of the group toward violators of the conventions have varied as much as the conventions themselves. "When in Rome do as the Romans do" is an adequate guide in theory, but when the Romans violate good taste and go beyond the bounds of prudence one's ability to control behavior must be exercised. It is well to remember that what may be "good form" in a limited group may be neither socially sound nor prudent behavior. Diversions from conventional tendencies may be merely silly or actually harmful. That the harm may come only in the psychological aspects may increase rather than mitigate the dangers as far as individual effectiveness and well-being are concerned.

Sex behavior and its ramifications have always been subject to conventions, taboos. and group direction. That these conventions vary greatly from barbarian to civilized man is to be expected. Sex behavior patterns of primitive people may be just as out of place in a civilized group as the behavior pattern of an infant may be in adult life. The human beings among whom we are living today do not exist in "a state of nature," hence the folly of depending too literally upon "urges" and uncontrolled "drives" to show us the way of desirable social behavior.

Behavior toward the other sex is predominantly social, with mating behavior occupying a relatively small part of the three score and ten years in which the two sexes may expect to associate together. By far the most time is spent in being a son or daughter; brother, sister, or more distant relative; father or mother; business associate or professional colleague; competitor or coworker; employer or employee; homemaker, companion, neighbor, and friend. However, the fundamental urge to mate, without which the race would perish, must be reckoned with in adjustment of every person. The *mores* of the social group set certain restrictions, which the individual cannot ignore with impunity.

The young people of today with more liberal social codes find that more self-control is demanded of them than was expected of young people in the days when prudery wrote the social conventions and the dominance of the male was unchallenged. Now that woman has demonstrated that she is a person with a mind quite capable of acquiring knowledge, she is insisting that information be made accessible. The young man too is quite aware of the fact that his assumptions of superiority must have some foundation in fact if he is to be accepted by others at his same self-regarding value.

They are demanding information about themselves and each other which will make at least some of their problems less a matter of guesswork and emotion. Marriage may become less a trial-and-error procedure and more a coöperative venture when the participants understand each other as human beings and combine comprehension of the essential needs and wants of each other with their emotional regard. Knowledge is sought from various sources, usually books and articles rather than oral exchange of information. The considerable volume of data carefully gathered from psychological problems involving sexual concomitants is being sifted and new data are constantly being added from experimental and other scientific procedures.

Catherine Cox Miles (1935) has surveyed the place of sex in social psychology and has presented a report which should be read by every college student before graduation. For those who fear that knowledge may take the bloom off romance she has this reassuring paragraph.

> In the present age the bans are falling, sex is no longer a subject tabu and mysterious (Emery, 1927). Sound scientific knowledge in the fundamental field of sexology does not encroach on romance and sentiment. In an older day a conflict was seen between science and religion. In our own day some fear a conflict between science and love. But as fifty years ago the fundamental scientific and religious truths emerged together as supplementary aspects of human thought in the interpretation of the universe, so in this generation the facts of science and the emotions of love may mutually supplement one another in the interpretation of personality and human behavior.

Again, she tersely emphasizes individual responsibility:

> Sex codes differ, and among both men and women probably those individuals are happiest and most healthful in their living who work out on the basis of all of the knowledge that is meaningful to them, including science, philosophy, and poetry, a personal code which embodies their own needs modified by social requirements (p. 769).

Bridges (1935) sifts his knowledge and that of others and presents a carefully thought-out psychological analysis and interpretation of the meaning and varieties of love which should aid in establishing a background for the formulation of a personal code of emotional behavior. He discusses three developmental types of love associated with sex as primitive love, experienced and expressed by relatively undeveloped persons; romantic love, built upon negation and compensation; and esthetic love, based upon acceptance of biological facts, and developed through the artistic elaboration of feeling and behavior.

Bridges' idea of esthetic love is harmonious with the changing trend of thought. Young people may despair of finding esthetic love, but when coöperation becomes the rule and knowledge and understanding are used to temper blind desire, such love may be the rule rather than the exception. Educated people should be the first to recognize the implications, but unfortunately education has not as yet solved the problem of assuring the acquisition of wisdom with knowledge. We too often have the sorry spectacle of people, who should know better how to control their behavior, mistaking liberty and freedom for license, and lust and promiscuity for normal sex expression. The ignorant should not be blamed for following a poor example as readily as a good one.

Marriage presents many psychological problems besides the emotional ones involved, important as they may be. Happiness within or without the marriage state is a matter of individual adjustment and mental characteristics, as much or more than economic security or any one of a dozen things in the social scene. Habits, manners, attitudes, abilities or lack of them, opinions, beliefs, and so on, unknown or ignored in the heightened emotional atmosphere of courtship, may become serious obstacles to coöperation and mutuality of interest in marriage. Personal complaints have an insidious way of undermining this coöperation. Robinson (1932) asks the question, Would it make any difference if the average couple of today went into matrimony more aware of the insidiousness with which personal complaint can take hold of a person?

The majority of adults design their lives so that a longer or shorter part of it is spent within the marriage state. Whether this period is spent in "Purgatory or Paradise" depends upon the personality factors the partners bring to the relationship and upon their ability to make satisfactory adjustments. Position, money, relatives, friends, work, and amusement may be important factors in the success or failure of the marriage venture, but the essential elements are the man and the woman. Many people have attempted to discover wherein the secret of happy marriage lies. Literature presents pictures of marriage ranging from the glorified state of all sweetness and sentimentality on the one hand to the equally extreme picture of ugly and sordid perversions stressed by morbid realists on the other.

Investigators of a more scientific turn of mind have made careful and extensive examinations of factual data and have made the results available in instructive form. Terman (1935) and his coworkers studied groups of happily married, unhappily married, and divorced couples, and found personality characteristics for each group which they believe genuine. These are suggested in the following excerpts from the study made with W. B. Johnson.

> Outstanding traits of the happily married, both husbands and wives, include emotional stability, social adaptability, uplift interests, and a tendency to conservatism, the men showing more tolerance and sym-

> pathy than the women. The unhappily married give most evidence of neurotic and introvertive tendencies, intolerant attitudes, and volitional inadequacy. There are, however, several well-defined sex differences, the unhappily married women being closer to the happily married than to the divorced, and the unhappily married man closer to the divorced than to the happily married. Divorced women, as a rule, are especially characterized by self-reliance, independence, tolerance, initiative, and conative intensity. The divorced, both men and women, have more intellectual interests than either of the married groups. Most of the group differences, though not all of them, are in line with expectations based upon common observation (p. 311).

These and other reports also imply the necessity for emotional training. The person who has learned to give and receive affection, who has experienced the advantages of mutual consideration, who has developed self-control for wholesome adjustment, has a better chance to be successful in marriage than the emotionally undeveloped and undisciplined person.

The importance of individual control of behavior within marriage has been discussed at some length because marriage is the normal expectation of young men and women. Some of the problems connected with this natural expectation will be discussed further in Chapter XVI. Meantime, let us regain perspective and recall that a great many people live satisfactory and useful lives without marriage or are married but a short part of their lives. Thus while it is important to train yourselves to succeed in marriage should you enter that state, it is even more important to train yourself to succeed in the wider relationships of friendships and association with human beings of either sex in the community of which you are also a part.

Behavior in the Community

Getting along with others, learning to like them and making them like you, is a desire rooted deep in the natural want for the approval of your kind. Friendliness is as necessary for comfortable living among those in the community as for successful home life, hence cultivating friendly and likable qualities is a worthy objective for all who would adjust themselves to social living. There are many books available which discuss this problem from various angles and for various groups. Myers (1935) has produced an inexpensive handbook, *Learning to Be Likable*, in which he discusses important personal problems and gives practical suggestions for their solution. Bennett (1934) also discusses the problems young people meet in adjusting to life situations.

The art of friendship naturally assumes an important place in such a discussion. The list of requisites for friendship is reproduced here for the same reason Bennett (1934) formulated it, "as challenge to thought regarding your own criteria for the choice of friends and your own standards of what you hope to be able to contribute to a friendship." The requisites are not listed in order of importance.

> Mutual attraction of personality.
> Mutual interests.
> Complementary interests.
> Similar attitudes, ideals, and standards of conduct.
> Absence of obnoxious or personally displeasing manners or personal habits.
> Neatness of appearance.
> Wearing qualities.
> Dependability.
> Unselfishness and mutual interest in each other's welfare and happiness.
> Possibilities for mutual give and take (p. 245).

Hindrances to friendship resemble hindrances to successful human association within the family circle. Bennett sums up the probable answers to the questions, "Why don't I make friends?" or "Why don't my friendships last?"

> Among the more obvious reasons are extreme self-centeredness, reticence, or shyness in meeting people, obnoxious personal traits such as "offishness," priggishness, intolerance, mannerisms, untidiness or lack of personal fastidiousness, or preoccupation with work which leaves no time for social amenities. Some individuals form such a strong habit of daydreaming to compensate for their lack of friends that they fail to make the effort needed to be friendly. Probing for the causes of lack of social success often uncovers many insidious factors of which one was unaware (p. 246).

The problem of likableness has been studied by Laird (1933) and his associates from the experimental approach. They have developed an inventory of traits which may serve as a practical basis for self-analysis. The list is designed to show general trends and should not be too rigidly applied to individual or specific cases. Every fifth item in this inventory is given here to show the type of reactions regarded as indicating likableness. The more "Yes" answers you can give in this self-analysis, the better liked you are in general. This inventory is quoted in full by Bennett (1934).

> 1. Can you always be depended upon to do what you say you will?
> 5. Do you refrain from showing off how much you know?
> 10. Do you keep from domineering others?
> 15. Do you avoid finding fault with everyday things?
> 20. Do you always control your temper?
> 25. Do you have patience with modern ideas?
> 30. Do you avoid asking favors of others?
> 35. Are you conservative in politics?
> 40. Do you avoid borrowing things?
> 45. Do you avoid making fun of people to their faces? (Laird, pp. 30–31.)

It is significant that in these discussions the writers can only chart the way for the individual to go. The actual performance is that of the individual. Reading a library of books about how to be likable does not help one iota unless you actually practice and do the things suggested. Reading about the importance of personal appearance does not help unless you actually do something to clean your clothes, mend the holes in your stockings, and learn how to comb your hair or wash your face. This paragraph is another repetition of the fact often emphasized that knowledge in itself has no magic power; it is knowledge in use which becomes a real force in shaping our behavior for satisfaction or distress.

Association with others in the community tends to extend our interests and enrich our lives in ways which too close association with families and friends cannot provide. Being interested in others, what they are doing, believing, and working for; identifying yourself with organizations attempting to improve social conditions in the community, state, or country; your school, your church, your club, and your job provide outlets for activity which the well-adjusted individual has learned to use wisely. Behavior in the community is basically the same as that acceptable in the home. It should be more restrained and controlled, perhaps, but show the same self-assurance and ease which habitually courteous behavior has anywhere.

Adjusting to strangers and meeting others of our kind may be a real hardship for those who have developed habits of timidity and excessive self-consciousness. Many people get along well within the close circle of family and friends, but cannot face with ease the social contacts of the community. Self-consciousness may interfere with social adjustments and interfere greatly with your enjoyment of association with others. Some people are self-conscious only in the presence of the opposite sex. If this is true, your thought patterns need overhauling to see why you are so abnormally sex-conscious. This knowledge may help you to realize that the other sex is after all another human being whom you can talk with quite as readily as with one who happens to be of the same sex.

Self-consciousness and its elimination. Self-consciousness is a fairly common ailment or liability which most of us must deal with at some time. It grows out of an undue self-regard which may grow into a habit of thinking that we are the focus of attention of others. Roback (1933) has presented a small volume to help those who wish to understand this behavior pattern better. He considers acute self-consciousness when it grows into a habit as an attitude, which may at any time turn into an emotion. In this reaction fear looms large, and the bodily state resembles that in fear.

Young people are particularly self-conscious about their personal appearance. This may be a matter of real distress until brought under the control of the individual himself. Adolescents may find their bodies awkward and unwieldly at times. If one can acquire a free and natural control of voluntary muscles, one usually feels at ease in spite of certain other flaws. Usually self-consciousness disappears with age and maturity, but it may become a fixed habit and even a neurosis, and interfere with work or cause other difficulties. However, it is well to remember that it is an acquired habit of self-regard and can be replaced by a more desirable and useful one.

The first step to overcome self-consciousness is to remember and know that self-consciousness is not a disease or an ailment except in certain situations. It usually goes hand in hand with feelings of inferiority in some certain respect. Unachieved ambitions that have not been outgrown or replaced by achievement in another line are often a source of self-consciousness. Hence almost a sure cure is to achieve something in some line which absorbs your attention and makes you forget yourself. The achievement may be only an animated interest in developing a gracious manner, a sympathetic approach, or interesting conversation, but it will serve to carry you through social situations with assurance and eventually with real pleasure where formerly you felt only distress.

An obliging attitude, kindness, and a charitable point of view will do much to reduce a tendency to self-consciousness. Roback also contends that self-consciousness is a sign of lack of sympathy somehow bound up in lack of faith in others, a certain aloofness from the world, an anticipation of hostility. Understanding others better, knowing more about them and finding them quite as human as yourself would help change this attitude.

Experimental data about self-consciousness and its elimination are still meager or almost non-existent, as it does not lend itself readily to present experimental procedure. However, Roback has presented the following points as definite means or aids in eliminating self-consciousness. His suggestions are given here in abbreviated form.

1. Achieve something in life, thus build up self-confidence.
2. Mix more with people.
3. Adopt a spontaneous attitude. Even overact the part until you make the attitude yours.
4. Maintain a firm belief in your message. "These people must accept my message."
5. The message must be uppermost. Take a decided stand. Speak as if what you were going to say is important, instead of mumbling it.
6. Self-consciousness is not suddenly eliminated. Cannot disappear by hocus pocus of even a psychologist or a neurologist. *The individual's coöperation is always absolutely necessary.* Not maxims, but good honest reflection requisite for banishing neurosis.
7. Picking out flaws in others sometimes a drastic measure necessary.
8. Diet and hygiene may help, they cannot harm.
9. Stimulants may help, but should not be depended upon. Lighting and handling a cigarette may be an activity to help you be nonchalant, if you already smoke. Not recommend that smoking be learned, however, as a cure for self-consciousness.
10. Above all, nevertheless, it should be borne in mind that mental control and self-discipline on the basis of rational conclusions and insight gained through social contact will be of greater consequence than all the nostrums and panaceas that may be devised. One ounce of spontaneous will is worth more than a pound of artificial "fixing."

This note of self-control which closes the chapter is a help in more situations than those that make us self-conscious. It is an ability, an achievement, if you will, which will go far in making us acceptable social beings, particularly when it is based on knowledge and understanding.

Questions for Yourself:

1. What behavior pattern learned as a child is proving most useful to you in adjusting to your college companions?

2. Is it possible for you to base a serviceable set of behavior patterns upon both a sound estimate of social influences and what you think of as your desires?

3. Is there a psychological foundation for the saying that "Manners maketh the man"? What is the rôle of courtesy in formulating etiquette?

4. Can you formulate a more serviceable set of rules than those given for overcoming self-consciousness?

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CHAPTER XIII

BEHAVIOR OF SELF TOWARD ASSOCIATES IN OCCUPATIONS

The adjustment which one must make to subordinates in any occupation, or to colleagues and superiors, demands a continual shift in one's own behavior patterns. This continual shift or change is necessarily modified by the particular situation, the work in which one is engaged, and by one's relations with associates in business. There is always activity and change in any life situation. Life is not a mass meeting; it is a parade. The diversity of human nature in these changing conditions keeps one mentally alert if one safeguards one's own impulses and motives and exercises adequate control over one's own behavior.

It is this adequate control of the behavior of self in occupational situations from day to day that we are especially concerned with in this chapter. Not only the control of one's own behavior as a leader, a boss, executive, foreman, chief, professor, or in any occupational position in which one directs others; but as a follower, an employee, worker, assistant, subordinate, or the position in which one is directed by others. The world requires these two types of individuals, those who lead, those who are led; those who are masters, those who are servants; those who assume responsibility, those who are more carefree; those who superintend, those who follow directions. As Spengler (1932) so appropriately says:

> For in this age of verbally managed enterprises there are not only two sorts of technics—these, by the way, diverging more and more definitely as the centuries go on—but also *two kinds of men*, differentiated by the fact of their talent lying in one or in the other direction. As in every process there is a technique of direction and a technique of execution, so, equally self-evidently, there are *men whose nature is to command and men whose nature is to obey, subjects and objects of the political or economic process in question.* This is the basic form of the human life that since the change has assumed so many and various shapes, and it is only to be eliminated along with life itself (p. 63).

Regardless of the particular level of your position in an organization, whether it be as an executive or as a worker, you have your own problems of self-control with your fellow men as colleagues. Your own satisfaction at work depends to a great extent upon the degree of direction and guidance you are able to give to your own impulses, which reflect in your mental attitude toward work. The man or woman who succeeds in becoming a master of self has conquered one of the most necessary requisites of an able executive—the ability to master others.

Behavior of Self toward Subordinates

Discipline versus morale. An executive who is a leader rather than a boss is far removed from the old type of disciplinarian so vividly associated with the traditional military regime. The rigid discipline which meant enforced obedience—every man must do as he is told—now is rapidly giving way and being replaced by an effective discipline referred to as morale. Work is done as well and often better, but the most important change in this new discipline or morale is the recognition of the worker as a human being, one who has will power, mind, and feelings that desire and want the same as before such recognition; however, these desires and wants now are directed in relation to the organization's desires and wants. The new leader gets results, not by commanding his men to work, but by stimulating their interests in the progress and problems of the organization to an extent that his men *want* to work. Smith (1931) writes that:

> With the same group of workers, with the same pay, and with the same equipment, under a certain management, the workers will give their best in energy and intelligence; whereas under another management, these workers will give as little as they can get by with, and some men may go farther and interfere where they can. A company pays the same for labor whether it is managed well or whether it is not, but what it gets from its labor depends not only upon the methods and equipment that the management provides, but upon whether the employees work with a will. This in turn depends largely upon the skill of the junior executives in dealing with human nature (pp. 220–221).

The authority to do things is not dominantly and oppressively exercised from a source outside the worker but it is vitally and cooperatively exercised from within the worker himself. It is an improvement from control of all activities vested in one person to distribution of control to each and every worker. The old heedless and ruthless discipline engendered fear, resistance, cowardice, hatred, suspicion, anger, and many more negative moods of the worker. In contrast, the new discipline or morale brings a response from the employees which expresses their positive moods of willingness to work, coöperate, be loyal, feel fairly treated, be satisfied, and feel themselves a part of the organization.

Characteristics of leaders. "Leadership," according to Tead (1935), "is the activity of influencing people to coöperate toward some goal which they come to find desirable." There is great art in leadership when an executive is able to direct the progress of his department or plant in such manner that his employees are participating with him, and are exerting effort willingly due to his influence. Whenever you possess qualities of leadership that inspire others to work with you for some common purpose or goal, and to feel sufficiently interested so that they are impelled to carry on with their own initiative, you are challenging them to creative effort. From creative effort, which is possible in thousands of workers, there springs the greatest satisfaction and feeling of self-fulfillment that man or woman can experience. Some new plan or idea easily may emerge when this inner activity is propelled by your own desires and wants and is directed into purposeful channels with the degree of self-control that engenders freedom of thought. This experience of creative effort, brought about by opportunities provided through the new leadership, is the essence of loyalty to the leader and the company. To be an executive with challenging qualities, which produce creative effort in workers, requires many characteristics. Tead (1935) suggests some vital ones as follows: physical and nervous energy; sense of purpose and direction; enthusiasm; friendliness and affection; integrity; technical mastery; decisiveness; intelligence; teaching skill; and faith in people. We might well give brief consideration to some of these characteristics and their relative importance.

Physical and nervous energy is of paramount importance in an executive who wisely directs it in the performance of his multitudinous duties without becoming exhausted. His buoyancy, cheerfulness, optimistic outlook which comes from relaxation, and the ability not to take himself too seriously are contagious among his workers. The reserve of energy, necessary for a superior in his dealings with men, is provided through rigid control in hourly expenditure of effort. The National Broadcasting Company in its new set-up at Radio City in New York City has provided storage batteries to produce power for a period of three days if anything should happen to the electrical current. An executive has advanced to his position of directing others primarily because he has learned the lesson of being prepared for emergencies, he can weather the storm, his endurance is unfailing. He must ever be on his guard to protect himself from excessive fatigue.

Tiredness is at the root of many situations where an executive loses control of himself, shows his temper, or becomes angry. I believe it was Whiting Williams who referred to "Tiredness and Temper" as TNT, the human dynamite which causes many explosions in human relations. Some ways in which a superintendent can conserve physical and nervous energy are to be simple and direct in his commands and talks with men; to be absolutely frank and genuine in his dealings with subordinates, and receptive to facts regardless of their personal effect on himself; to be worth listening to when he speaks, have something to say that is worth while and say it slowly so that the meaning of words is absorbed; to be calm especially in times of stress. Calmness is a product of thoughtfulness; it is possessed by the man who habitually exercises self-control.

Many industries have provided means for self-assertion by workers through a "complaint drainage" which conserves energies of leaders. To be able to complain relieves tension. Many so-called complaints, however, are not really complaints at all but mere indicators of need for adjustments. Those complaints which are no more than "letting off steam," or only a demonstration of resentment, seem to end with the outgoing activity. But when the complaint requires a satisfactory response from the appropriate authority, it is rightly called an adjustment. Many adjustments are now directed into channels which stimulate constructive ability of the workers, who are encouraged to make suggestions for the improvement of the organization. Constructive suggestions are often an outgrowth of talks between executive and individual employees. A well-adjusted executive will readily plant an idea in a worker's mind and let it develop later as the worker's idea. The beginning of such constructive coöperation on the part of workers energizes accomplishment. The suggestion system is sound psychological technique which operates to the advantage of the whole organization. It is the positive and constructive outgrowth of an attempt to relieve junior and senior executives of petty complaints.

An executive with a *sense of purpose and definite direction* in all his commands and suggestions to employees develops firmness which workers respect and depend upon. Firmness exercised with tact displays self-control that prevents personal buffetings from others. Tact in this sense means a consideration of the personality of others and a regard for their pride. This firmness, mild but sure, is stimulating rather than oppressive to workers, and becomes a natural technique for those superiors who work with a vision and sense of purpose in guiding men.

Other evidences of a high degree of self-discipline are shown by executives who are courteous and have requisite dignity, referred to by Schell (1934) as restraining tools of an executive. Courtesy to subordinates as well as to superiors protects one from displaying an excess of will power and a pompousness which begets many hazards. It is the direct result of consideration for others and can only be natural to that executive who habitually controls himself. With habitual courtesy belongs a necessary amount of dignity to shoulder the responsibilities of a directed program toward specific results. Genuine dignity—a false dignity is quickly detected—is a natural characteristic of those who are self-disciplined.

Enthusiasm in an executive is contagious. The interacting influence of such a personality among workers creates a will to work that flouts boredom. Real enthusiasm for work implies faith in its outcome, deepens concentration, and focuses effort, which result in richer and more wholesome application to the task. Those executives with a higher degree of self-control take care to conserve enthusiasm at the beginning of a project when it is so easily aroused and save it for the end of the task, when it is more difficult to create.

Subordinates in work appreciate *an executive who is friendly and kind*. An executive must be sure of himself to express friendliness and affection to his men. Friendly acts may vary from the foreman of a mill-working crew who can "bum a chew of tobacco" from one of his men to the busy executive who never fails to remember his employees in times of illness or grief. Employees too rarely hear commendation of their work. The traditional law of human relationships is to complain when something goes wrong, otherwise be silent. "But by and large," says Tead (1933), "people yearn for, crave, and thrive on some occasional, affirmative mention by their executive superior of the good work that they are doing" (p. 166). Another form of the expression of friendliness from an executive is the information he purposely conveys to his men as to results of projects on which they are working. When a new machine is completed, they may be given time off to visualize the fruits of their labors. Seeing the whole and its successful operation stimulates loyalty in the organization and a feeling for values in work that piece-rate tasks in themselves never convey. The behavior of men who work with a leader and not under him reflects the characteristics of a friendly executive who understands human nature.

How would you classify the executive described by Schell (1934) in the following statements?

> (a) His department runs like a watch. No hurry or flurry, but everyone on the job and things getting done. I don't know how he manages it.
>
> (b) His department accomplishes more with less apparent effort than any other division. He certainly knows the trick of getting results.
>
> (c) The thing that pleases us most is his absolute dependability. You can give him a difficult job and never have to think of it again. He doesn't require follow-up.
>
> (d) It's a curious thing, but I get more requests from employees for transfer to his department than from all the others put together. His wage scale is no higher and the work is less pleasant if anything. But everybody wants to work for him.
>
> (e) They tell me that last spring some of the men learned that he was to put his boat in the water on a certain Saturday afternoon. Although no one was asked, between ten and fifteen of them "just happened to come down" to the beach to help.
>
> (f) His department has been a sort of incubator for executives. During the last ten years, I should guess that a third of our new bosses have come from his division.
>
> (g) Everybody smiles when he comes into meeting. You like him, even when he's disagreeing with you. And he is a mighty good man when it comes to difficult labor situations. The men all swear by him, and he has a way of making the right thing seem obvious.
>
> (h) About once a year we call on him to explain how he gets his low unit costs, but he just says, "Well, I don't know. The boys could answer that question better than I could." The truth is, they work like Trojans for him and enjoy it.
>
> (i) He was in town last week and dropped in to visit his former department. I saw man after man go over and shake hands with him. One old codger said, "The seven years I worked for you were the seven happiest years of my life." He certainly has a lot of friends around here (pp. 221, 222).

Every proficient executive inherently possesses a fundamental *faith in men.* The utmost *integrity* goes with this faith in men.

In a recent conversation with an executive, who is a patent attorney in a large and flourishing industry, reference was made to his own inventive ability and to his numerous patents. He replied that he no longer attempted to invent anything, now that he is in this particular executive position. He explained that he would not want his subordinates, who were submitting their own ideas to him for suggestions, to think for a moment that he might be greedy to claim those ideas for his own and apply for patents. A good executive never gives rise to distrust, he safeguards a subordinate from the subtle beginnings of fear which need to be nipped in the bud. He lays his cards on the table before him at any time of misunderstanding. He is interested only in having a workman's desires for accomplishment in harmony with his desires for the company. He can deal with facts in an impartial and impersonal manner which lifts him above strife for personal and petty gains. He becomes a marked man by workmen, he is "on the level," "on the square," "a white man," and gains a reputation that he is a just man. And when once an executive has forged for himself this feeling of justice in his consistent treatment of employees, he has gained a lever of self-control that brings worthy responses in achievement from his men.

Justice is never the result of uncontrolled emotions, it is forever a product of the intellect. The fair executive in his dealings with men is one who is *intelligent*, knows facts, can think straight, and has *technical mastery of his field*. An executive without adequate knowledge, who does not measure up to his men in the specific technical skill of his department, cannot maintain the respect of his employees. As a junior executive remarked, "When one frets about work with a senior executive, it is not that one feels superior in anyway, but it is impossible to work with a chief who does not know his business." The teaching skill required of many executives would imply requisite knowledge and training in the field, but these qualifications do not assure him of his ability to lead and direct men.

Difficulties with subordinates in the form of petty jealousies, open or secret opposition, dishonesty, unreliability, disloyalty, lack of perseverance, religious, social, and wage difficulties, and so forth, put your self-control to the highest test. Difficulties with employees can best be solved by guarding yourself from adopting similar emotional tensions to those of your employees. Many of these disturbances arise from misunderstandings, and many of them are due to friction from involved conflicts.

The integration of conflicts. There are three ways in which conflicts may be dealt with according to Follett (1926): by domination, by compromise, or by integration. The method of *domination* is rapidly becoming outmoded. It is the old procedure of one side winning and the other sacrificing his desires, which results in dissatisfaction and restlessness in the group. *Compromise* raises the level of adjustment to a plane where both sides sacrifice somewhat and neither wholly dominates the situation. The third procedure of dealing with conflicts by *integration* is the highest form of adjustment which provides the most wholesome and just atmosphere for both sides to carry on. The new leaders are using conflicts in a constructive way, by having them work for the betterment of the organization. Conflicts between two groups or two persons which are resolved by integration often give rise to the emergence of new ideas, and may lead to inventions.

In order to solve problems by integration which are involved in disagreements, an analysis of the situation needs to be made based on facts, and the solution expressed in a new pattern in which there is balance of conflicting impulses with neither side sacrificing their demands or wants. Follett (1926) gives the following illustration of conflict in the Dairymen's Coöperative League which was solved by integration. The drivers were unable to agree about unloading milk cans. The platform for unloading was on a hill. The uphill drivers claimed precedence in unloading and so did the downhill drivers. The settlement by balancing the conflicts was made in a change of the position of the platform so that both downhill and uphill drivers could unload as they wished.

Smith (1928) says:

> Integration is an achievement that requires skill and effort. . . . It is easier to command than to bring about a common understanding. To integrate is not easier, but temporarily at least, more difficult than to rule by sheer power. The value of integration is not that it makes present solution simpler or easier—its value lies in the better quality of the solutions, even though more difficult to attain. To learn how to integrate makes life or management not easier, but better and richer. . . . Integration combines orderliness and control with freedom. It adds to the blessings of well-articulated operation the power of voluntary coöperation and joint contrivance. It develops the character of an industry and, through the development of its character,

> the character of all who are engaged in it, to the extent that an organization or personality is, through skillful integration, at peace with itself and its elements employed in the service of the whole, there come stability, power, and poise (pp. 241–243).

Examples of the integration of disputes and conflicts in business organizations and in national and international affairs are found frequently in literature. A simple illustration of integration, given by Follett (1930), may occur within your own experience.

> An electrician comes to wire my house for electric lighting. I say that I want it done in a certain way. He says that there are mechanical difficulties about doing it in that way. I suggest another way. He says that the laws of the State in regard to fire safeguards do not permit that way. Then he tells me how he thinks it should be done. Do I accept his integrations? No, because I have a very decided objection on account of aesthetic reasons or reasons of convenience. We continue our discussion until we find a way which meets the mechanical difficulties and the laws of the State and at the same time satisfies me (p. 64).

There are numerous obstacles to integration which are possible to overcome. They will readily disappear when organizations, industries, and business realize the advantages to themselves inherent in the creative and constructive solutions evolved. When executives and leaders can master this psychological technique, they will cease to fear disagreements. The rich returns will more than outweigh the integrated effort necessary to organize their thoughts and resolve their emotional tensions in order to maintain the high control of self in this greatest of all achievements, the creation of new and serviceable outlets for smoldering resentments and dissatisfactions. Psychology has this solution of integration to offer for the improvement of the behavior of self in dealing with others.

Magoun (1932) explains that one of the common criticisms of engineering students is their inability to get along with people. Therefore he presents various problems in industry to his students in the class of Humanics at the Massachusetts Institute of Technology in order to challenge their thought in the best way of handling the problems which arise between associates on three occupational levels designated by him as superiors, equals, and inferiors. From more than 10,000 papers with answers by those students to specific problems in human engineering with which any worker is struggling today, he published certain representative solutions, developed by 479 students, which include the mediocre and worst solutions as well as those of more mature personalities. One of these problems for each occupational level with solutions presented by students is given in this chapter so that readers may analyze for themselves the various degrees of self-control and maturity exhibited by these students in their suggested solutions. How mature is your own thinking about these and related problems?

Relations with inferiors. For a study of the problems a superior may meet in dealing with his subordinates, Magoun's problem 40, "Selecting a Successor," is chosen. The problem, which follows, has the statement of the problem and four questions to direct the student's answers. Five solutions by the students were given with the following titles: "Picking a Winner," "Survival of the Fittest," "Contenders for the Throne," "Man Hunt," "A Year of Grace," but only the first two solutions are included here.

PROBLEM 40: SELECTING A SUCCESSOR [1]

You have come to realize that before getting another promotion you must train an understudy who can take over your work as district sales manager. After investigation you reluctantly conclude that no one now in your organization can be groomed for the place. This undesirable situation must be remedied at once by hiring some new men, one of whom it is hoped will succeed you when you move up in a few years.

(1) How will you secure the candidates?
(2) What characteristics will you look for?
(3) What will you do with them in order to discover whether or not they possess these characteristics?
(4) How will you make the final selection?

PICKING A WINNER

1. How might the sales manager secure suitable candidates?

First, I suggest he make further efforts to find the necessary candidates in his own organization. Bringing in outsiders for promotion to the higher positions is not good for the morale of a group. If the sales manager is a good leader, he should certainly be able to develop some candidates from among his assistants. "There are no good crews nor bad crews; there are only good leaders and poor leaders."

If it is really necessary to look for outside candidates, the sales manager might try the following fields:

a. His own acquaintances, or the acquaintances of his friends.
b. Well-worded advertisements in the trade papers, to attract some of the crack salesmen of other firms in the same field.

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[1] From F. A. Magoun, 1932, pp. 401–408.

c. The other branch offices.
d. First-class personnel agencies.

2. What characteristics would be desirable in the candidates?

In the order of their importance,—
a. Intelligence: the ability to think for themselves, originality, and an inquisitive turn of mind. The woods are full of honest men, but it takes a lot of hunting to find one who can think.
b. Reliability and integrity.
c. Sociability and amiability, implying leadership.
d. Culture and refinement.

Since "Webster lists over six thousand human characteristics," I might undoubtedly mention others. To do so would only confuse the issue. Any man with a high average in these four items would be acceptable as a candidate.

3. What might be done with the candidates in order to pick and train the successor? Test them "under load"; it is the most reliable method yet developed.

a. A short training period might be necessary, if only to familiarize them with their new company, new products, new methods of doing business.
b. Put them into the field, with the rest of the men, and judge by the results.
c. At the end of four or five months give the best of them some little executive job around the office. This should parallel that of the sales manager.

4. How could he choose the best candidate?

a. Personality, appearance, and success in selling himself.
b. Previous record, not only as to sales, but more especially as to handling men.
c. Character. I don't propose to take the chance of opening my newspaper some morning to read that a district sales manager of my making was taken in the raid of a down-town speakeasy last night. We don't need that kind of advertising.
d. Education, experience, and ambition. Never play with a man who is on the way down, but always with a man who is on the way up.
e. How he handles his money. If he can manage his own money wisely it may be safe to intrust him with the company's money.

If there are two men equally capable of doing a good job, there will be work for them both. If one is better than another, there should be little difficulty in choosing. If neither is good enough after my selection and tutelage, I do not deserve the promotion. What a beautiful check!

SURVIVAL OF THE FITTEST

1. Securing the candidates.

There is one procedure which I would decidedly avoid. I would not advertise for my candidates. Although a few of the individuals who responded to my advertisement might be fairly capable, I should probably be pestered by a swarm of common, nincompoop salesmen who had been fired from previous positions, and who would blow off a great deal of wind telling how high-powered they were, when really they had been selling silk hosiery from door to door all their lives. I should not appeal to my college professors. They are interested in recent graduates; I doubt that they keep in touch with the others.

My method would be to go around to other concerns somewhat similar to ours, and inquire about their salesmen. Most companies are glad to see a good man advancing in position. However, if a company was unwilling to give me information concerning its salesmen, I should find out for myself by seeing the good men individually while they were selling.

2. The characteristics I should look for would be as follows:

Physical:

Abundant energy, good appearance, pleasing voice, neatness.

Intellectual:

Knowledge of human nature, good memory, commercial sense, sense of humor, patience, keen observation, originality, foresight. Ability to talk interestingly without telling everything.

Emotional:

Enthusiasm, self-confidence, interest in people, emotional stability, courage, aggressiveness, tact, ambition.

3. Period of training and observation.

I should put each of my three candidates in complete charge of the sales of a certain city in my district. The three cities would be approximately of the same size and buying capacity. The candidates would be free to hire and discharge men at will, but each would always have to keep a force of from four to six men busy. I should be careful to observe just how they ran their respective territories, but never to interfere. At the end of a year I would compare their sales, their total expenses, and their net earnings for the company. These data, together with any information I might have secured during the year by observation or otherwise, would form the basis of my selection. For example, I should judge that man to have the most initiative who had bothered me the least and whom I could always count on to have his job done on time.

4. Final selection.

The man with the greatest net profit would probably be my selection. The very fact that he had the largest profit would show without a doubt that he was the best at hiring and handling men.

Checking my choice:

There is only one way of being sure that I had chosen wisely: give the man my job and watch results.

Hence, as a final test I should take a vacation, delegating authority to my choice, to see whether the department functioned properly under his supervision.

BEHAVIOR OF SELF TOWARD SUPERIORS AND COLLEAGUES

The behavior of a worker or a junior executive in relation to his superiors and colleagues is equally as important as that of the executive toward his subordinates. In fact, admirable conduct on the part of an executive is quickly reflected in the attitude of his men by a reciprocal relation equally as admirable from subordinates to their superiors. Many qualities of personality common to efficient leaders and listed previously in this chapter are found in their subordinates as well. But the problems of adjustment for the worker are always colored by the feeling of contrast with his superior.

Control of self as a subordinate. It is easy for a subordinate to be unmindful of the responsibility which any executive assumes in office and to underrate his value to the organization. The situation varies, of course, for those who are eager for advancement, apart from those who are content to be led. This eagerness for and anticipation of promotion may easily weaken the essential pillars in self-control during vocational growth, which are patience and tolerance. Many organizations put subordinates through their paces, so to speak, which is a planned attack to test stability of those traits necessary for strength in tight places. Those who survive have renewed their efforts of self-control through the succession of ordeals, and they emerge with the insight, balance, and poise which are essential in getting along with associates.

The employee responds favorably to his superior when he feels a sense of fair treatment. He is inspired and appreciates recognition of his work by his superior and more than doubles his efforts to merit future commendation. He feels security and interest in carrying out orders when he has been given some inside information as to objectives in mind. Many employees are made to feel as though they are coworkers with their foremen rather than subordinates. Participation and coöperation is maintained in smoother channels under these conditions. The worker can easily capitalize upon his superior's desire to propose new ideas by planting in his superior's mind the germ of an idea which later becomes the idea of his superior. In this way many of his desires in relation to his superiors are fulfilled. Some superiors, rare though they may be, are more considerate than others in placing credit for initial ideas where credit is due.

Relations with superiors. For a study of the problems that subordinates may encounter in dealing with superiors, Magoun's problem 23, "If the Boss Steals All the Credit," is given here with the statement of the problem followed by the students' solutions. There are nine solutions in all, with the following titles: "What Price Glory," "Bitter Aspects," "With Brassie and Niblick," "Little Big Man," "All Is Not Loss," "Between Ourselves," "Protecting Myself," "Everything Comes to Him Who Waits," "Right *vs.* Expediency." Only the first three solutions are included here. These suggested solutions come from minds and personalities equivalent to yours in maturity. It is worth while to identify the degrees of self-discipline necessary for carrying out any of these suggestions.

PROBLEM 23: IF THE BOSS STEALS ALL THE CREDIT[1]

Your exact niche in the organization has not yet been carved out. Meanwhile you are wisely making yourself as busy and as useful as possible. Among other things you have done a little research in connection with new uses for your company's product.

With great care and much enthusiasm you wrote up the results and gave the report to the boss. You were quite disappointed when he did not say much. You were distinctly angry when you picked up a trade journal at the public library last Sunday and found your article published under his name.

Now that you have cooled off a little and can see the situation more objectively, what is your reaction?

WHAT PRICE GLORY

The problem brings to my mind the circumstances which my cousin, a Chemical Engineer, encountered. The facts in both cases are very similar. I should follow the method he used in overcoming his difficulties.

After graduation, he was placed with the XYZ people in one of their tremendous laboratories. The first couple of years he did not achieve any outstanding success; set no worlds afire with his ability. He kept at it, however, plugging along in his dogged and unassuming way until things began to happen. He struck a rich vein of ore in that persistent mind of his. Invention after invention, new process after new process, ideas upon ideas were turned out in the next three years until the machinery and processes in the plant were far different from those of a few years previous. Oh yes, he advanced in salary and position; but do you suppose that he received the credit for his accomplishments? Not on your life. For a while he wanted to rebel, to expose the man who had hi-jacked him of his just rewards. But after much thought, another plan presented itself.

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[1] From F. A. Magoun, 1932, pp. 221–226.

He continued to formulate new processes and ideas with as much success as ever, but he kept these stored away in the back of his mind for future use. He also started to look around for a new company, a company which would require new ideas, was young in years, and could use progressive measures to the best advantage. He found such a company, in Ohio, and interested its officers in giving him a chance to prove his ability. He transferred to them and directed from the very beginning the establishment and equipping of a new plant. Using the ideas and inventions which he had kept to himself for over a year, the company made phenomenal progress. His position now is a very responsible one; and he not only gets the credit for what he does himself, but he also knows enough to give proper credit to the men under him for their contributions.

When one achieves a degree of success in one's first business position, the men higher up are sometimes reluctant in handing out credit because they believe one's success has been due to their immediate supervision. That is the time to start moving. In another company, ability and experience may be more respectfully received.

BITTER ASPECTS

This problem comes home to me with a bang. I have encountered its bitter aspects already. I once performed an original investigation and took great pride in the careful report which I turned in. Less than a month ago the supervisor to whom I had reported published a book, one chapter of which was taken word-for-word from my report. And there isn't even a polite bow in my direction in a footnote, to say nothing of the acknowledgments.

How treat these credit hogs? I'm too emotionally involved right now to know. Obviously if I kick, he will see to it that there is no future for me. The one main point to consider is not my theoretical rights but my research. Any action which would cause me to lose a year or two would be inadvisable, unless the injustice were far greater than it is. Apparently my only hope is to try to get more out of him than he has got out of me. Some day I'll know more than he does, and then I shan't care.

WITH BRASSIE AND NIBLICK

I have two courses of action. I can follow the line of least resistance and do nothing, or I can tactfully arrange a conference with the boss and ask for an explanation. If I do the former, it is quite possible that my boss will think that I have not the guts to stand up for my rights. On the other hand, in times of depression, such as now, when good positions are scarce, I don't want to do anything that might possibly cost me my job. Taking everything into consideration, I think my boss will respect me more if I meet the facts as they are, and don't try to dodge the issue.

In this day and age, nearly every business man is an ardent golf enthusiast. I am going to assume that my boss is such a one and very proud of his game. Also, I assume that I am a better player than he. On some fine day, accidentally on purpose, I shall be at the country club just as he is about to go around, and will play with him. I will keep the match very even all the time, compliment him on his fine play whenever possible, and let him win the match on the last hole.

At dinner after the match, it will be very easy to "talk shop." Then I can shift the talk to my own work, telling him what I have been doing. I can casually mention the fact that I have seen an article in the *Engineering Journal*, written by him, and suggest that the results of my work, and the ground covered in his article were quite similar. He will probably agree, and also probably begin to see what I am driving at. If I can obtain at least partial satisfaction, and at the same time let my boss save his own dignity, we shall both be satisfied.

I may even ask him if he doesn't think that through some careless error of the editor, the acknowledgment of my name, as one who had contributed valuable assistance to the work, was accidentally omitted. My boss, still being in a good humor, after defeating me in golf, will probably agree with me, and say he has been intending to write to the editor reprimanding him for his carelessness.

Types of adjustment. The ever-developing self-control of subordinates can be shattered by an executive who disregards his workers' feelings and reprimands them in public. Most of us resent being "bawled out" publicly. An able executive will avoid creating this unfortunate attitude on the part of a worker. The constant adjustment that employees must make to their superiors—too few of whom possess the desirable personalities of great leaders—may occur, according to Hepner (1934) in three ways: (1) by negative adaptation, (2) by cumulative annoyances, and (3) by insight-meaning. The worker who becomes indifferent to an annoying foreman and ignores his taunts has set up a *negative adaptation.* An energetic wife must adapt to a lazy husband in this way. A child often adapts negatively to a scolding mother. The *cumulative annoyances* which develop in the sensitive worker who cannot take the ridicule and sarcasm of his foreman may cause him eventually to lose control of his temper. If the tension is not relieved in this manner for fear of losing his job he eventually may break under the strain. The most satisfying adjustment is by *insight-meaning* where the irritable situation is studied, acknowledged, discussed, and a search made for its cause. The constructive approach to the disturbance by this means enables one to rise above it, a new meaning is given to the whole situation, and it ceases as an annoyance. This type of adjustment is possible for the intelligent worker who has disciplined himself rigidly and who makes an effort to understand human nature. It requires intelligence and poise.

The dangers in being led occur, according to Tead (1933), in the following circumstances: when you are victim of a policy which does not sufficiently employ an educational motive; when your leader develops pathological tendencies; when your leader has a physical infirmity or handicap for which he may try to compensate by unduly aggressive conduct; when your leader does not keep up with the times, with the technological facts of the enterprise, or the facts regarding the current temper of the members of the enterprise; and when your leader is definitely limited in mental or emotional equipment and he tries to compensate in some harmful way. The adjustment which a subordinate is required to make to situations not under his control, if he continues work with dangerous leaders, is not alone the adjustment in which he exercises the greatest self-control, but that in which his own control over self is coördinated with the best interests of the department. The leader's limitations must be recognized and his peculiar and interfering manner dealt with to some extent by negative adaptation. Recognizing some people as "patients" even though they are not under the doctor's care and admitting to yourself that they are irresponsible at times will ease your adjustment to them whether they are superiors or colleagues. A sense of humor and the ability not to take yourself too seriously will tide you over many difficult moments with little loss of self-control. It is just as important for you to seek to work *with* the right executive as it is for you to search for the right business organization.

Relations with equals. You will find various suggestions of degrees of control over self in the nine solutions submitted for Magoun's problem 15, "Blueprint Blues," which follows, a problem dealing with the relations with equals. These solutions are entitled: "Animal Kingdom," "Wounded Ego," "Psychologizing," "An Aye for an Aye and a Toot for a Toot," "Hell and Honey," "After the Brawl Was Over," "Black and Blue Prints," "Make the Lion into a Lamb," "The Square Pagan in a Round Hole." Only the first three solutions are included here.

PROBLEM 15: BLUEPRINT BLUES[1]

A few days ago you saw the chief draftsman coming out of the pattern shop with the remnants of a blueprint in his hand and murder in his eye. Gradually the story has leaked out that without consulting the drawing room the boss pattern-maker had made some minor alterations in the design for a new casting. His experience told him that to do so would facilitate manufacture, without in any way prejudicing the performance of the machine.

It is only a detail. But when the chief draftsman heard of it he thundered into the shop; asked the boss pattern-maker, "Who the hell do you think you are—the whole works?"; snatched the altered print; and tearing it to shreds, threw it into the pattern-maker's waste-basket.

What would you have done if you had been in charge of the pattern shop?

ANIMAL KINGDOM

"Man shares with many of the animals the tendency to frighten his opponent by loud roars or bellowings," writes McDougall in his *Social Psychology*. Also, "Many a little boy has, without example or suggestion, suddenly taken to running with open mouth to bite the person who has angered him, much to the distress of his parents."

The draftsman acts in quite a similar manner. Although he does not exactly follow the primitive instinct to bite me, he does the civilized equivalent by tearing up the blueprint. Evidently he wants to frighten me. Why should he? His pride, vanity, and ego were wounded by the thought that a much younger and less experienced man could improve upon work which he had been doing for years. If he was not aware that the changes made an improvement, he was motivated by a feeling of indignation that any mere pattern-maker should be so insolent as to deviate from the drawings without authority. Second, his pugnacious instincts were aroused against the miscreant who had dared to mutilate his handiwork.

"This bozo must be put in his place! I'll go right down and show him where he gets off at," he thought; so he came down and made noises.

If I had been the boss pattern-maker, undoubtedly of superior physique to a mere draftsman, my reaction would have been equally characteristic of the human animal: a similar display of pugnacity, with the recommendation to "Get the hell out of my foundry."

The draftsman would undoubtedly see his mistake and withdraw.

WOUNDED EGO

There are two reasons for his anger. You had the impertinence to originate an idea which had not occurred to him; and you added insult to injury by incorporating the change without first consulting him.

But the problem is to remedy conditions. There is only one thing to do; back water and back water fast! Tell him you are very sorry but that you didn't think the matter was important enough to take up his valuable time. Make the pattern the old way; and at a more opportune time, when the chief draftsman is feeling better, ask his advice on these changes. Then ask his permission to put them into operation. The chances are that he is intelligent, but an introvert. His inferiority complex will be assuaged by your asking his advice and permission, and he will give them both freely, entirely forgetting the previous incident. All he wants is to feel important.

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[1] From F. A. Magoun, 1932, pp. 139–144.

PSYCHOLOGIZING

William James once said, "The great snare of the psychologist is the confusion of his own standpoint with that of the mental fact about which he is making his report." Not being a psychologist I hope to avoid this snare in reporting of the case of the torn blueprint.

Following the chief draftsman's tantrum, let us suppose that the shop foreman calmly acknowledges his unsolicited proofreading, and merely says he thought the change so obvious and so slight that it needed no conference between the drafting and pattern-making departments. He adds that he is surprised at the chief's display of temper, but says that in the future he will not initiate any change in the patterns without first consulting the chief draftsman.

I psychologize:

Stimuli	*Reactions*
Foreman sees chance to simplify drawing. His desire to show his initiative is overwhelming.	Modifies blueprint.
Draftsman sees change. Immediately feels inferior and wants to do *anything* to gain altitude. His judgment is poor, he stalls and loses about 3,000 feet.	Tears blueprint and generally makes fool of himself.
Draftsman's anger arouses foreman's self-defense instinct but his control is good and he starts to climb.	Defends himself by stoical and intelligent reply.
Foreman's control admired by draftsman in spite of his condition. Feels quite inferior.	Apologizes.
Feels very, very low at the moment, but quickly gains speed and starts to climb.	Determines to have more control in the future.
Draftsman's response seems great to foreman. Wonders if he would respond under the same circumstances.	Determines to assume less authority. Shakes hands with opponent. Both feel fine.

Difficulties with superiors referred to by Schell (1934), and his suggestions as to how to meet them, are psychologically so sound as a means of improving self-control in human relations that you would profit by studying them thoughtfully. It is only possible in this chapter to mention them with a few of his comments.

> In a situation where you *disagree with orders,* ask the privilege of voicing objections with an understanding that you wish them answered in order to learn.
>
> Little is gained by *appealing to higher officials* or "going over the head" of your chief.
>
> If you are loyal and believe in your organization you will *refuse to voice feelings of criticism* against your superiors. Criticism may be justified but its expression not.
>
> Guard against repeated appeals to your chief for action when *delay occurs in important administrative decisions.*
>
> Such delays as well as delays *which occur in administrative action* must wait until the time is ripe. Patience, to a greater extent than subordinates know, must be applied to these delays.
>
> *Lack of access* to a superior is not denied those subordinates or junior executives who are effective in conserving the chief's time.
>
> The *pressure from superiors* should be met to the fullest extent of expectations. Quick responsiveness is a test of loyalty.
>
> *Determination of the area of discretion* develops gradually and is often clarified by the subordinate's inquiry in relation to a new task, such as, "Do you want me to take up matters of this sort with you hereafter, or shall I go ahead on the basis of my own judgment?"
>
> Seek light on the matter of the *determination of the scope of authority and responsibility.*
>
> *Emergency decisions* do not occur often under good management. Foresight and planning preclude many surprises. When you must assume unexpected responsibility, choose a decision which serves the interests of the company. State it clearly, definitely, and vigorously.
>
> *Incompatibility* does not necessarily exist if warmth of personal regard between you and your superior is lacking. Respect and mutual confidence are sufficient. Coolness and aloofness in the chief are not sufficient basis for a suspicion of antagonism.
>
> When you have *assumed mistreatment* don't talk at first; second, delay action until you can think with a degree of cheerfulness; and finally, go to your chief. Maintain a pleasant attitude. If the situation remains unclarified ask permission to talk with the superior officer.
>
> During times of *external relationships* with your chief at company celebrations, committee or group activities, don't be afraid of him, be natural and sincere. External contacts are initiated by your superior.

These condensed suggestions for the most favorable type of behavior toward your superiors can be interpreted directly into varying degrees of self-control. In all human relations it is well to inquire if your behavior toward others, your subordinates, colleagues, and superiors, is such that it permits freedom of personality development, not only for yourself but for all those with whom you have relations. Personal autonomy should be recognized under all circumstances. "This is the most important word," says Follett (1926), "not only for business relations but for all human relations: not to adapt ourselves to a situation—we are all more necessary to the world than that; neither to mould a situation to *our* liking—we are all, or rather each, of too little importance to the world for that; but to take account of that reciprocal adjustment, that interactive behavior between the situation and ourselves which means a change in both the situation and ourselves" (p. 130).

Factors in morale which favor reciprocal behavior. And finally the morale of the group, which involves all associates in occupations, can be maintained best if all concerned can experience the following requisites as given by Tead (1933): (1) good physical health; (2) good mental health; (3) effective leadership; (4) explicit purposes known and believed in by the group; (5) knowledge of the impressive traditions of the group; (6) adequate knowledge of technique by each member; (7) a sense of fair treatment in relationships with others in the group; (8) a reasonable sense of the permanency of one's tenure in the group; (9) a sense of being recognized as partners in and not as servants of the group; (10) clear identification of each as a member; (11) knowledge of the results of each individual's and the whole group's progress; (12) conscious organization of approval of good results; (13) some participation in the results of the efforts of the group; (14) confidence in the success of the group's undertaking; (15) conscious assumption of responsibility by every member of the group; (16) the support of favorable home and community conditions and attitudes; (17) the elimination of unfounded rumors (p. 175).

There is no panacea to be given as a remedy for the ever-existing problems of behavior involved in getting along with others. There is science in the application of fundamental principles in adjustment, but your conduct in specific situations is an art. Human relationships in living and in making a living abound in conflicts, resistances, and obstructions. Learn to consider them as natural and necessary for progress. The art of resolving them into higher levels of energy expenditure and constructive coöperation signifies maturity in personality. As you do something with each situation you meet, it does something to you. Ideas, things, and people affect your behavior as you come into some relation with them. Your control of your own behavior then changes from a theoretical control involving only yourself to a practical control involving yourself in relation to these ideas, things, and people.

This chapter is not intended as a presentation of any Utopian scheme of behavior with associates; nor is it intended to be a collection of psychological facts to be hoped for but not existing at the present time. There are many signs of the more mature levels of adjustment. In your early experience with making a living and getting along with others, keep some of these high points in mind, look for them in your superiors, in your fellow workers, and in your subordinates. Cultivate their development in yourself to an extent which will make them recognizable to you and your associates.

Questions for Yourself:

1. From your own experience how would you characterize the superiors for whom you may have worked in any tasks outside your home?
2. Have you ever been in a position which demanded more self-control than usual with superiors, colleagues, or subordinates?
3. What is the value of conflicts in reciprocal behavior? Can you now identify integration of conflicts which has occurred in the reciprocal relations within your home, your social group, your community, or your university?
4. Do you feel the same pride when your associates show self-control in difficult situations as you do when you yourself experience it?

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CHAPTER XIV

SELECTION OF VOCATION

Many individuals select their vocational field by choice, some also select their specific occupation by choice within the vocational field, but many happen into it by chance. We are especially concerned in this chapter with the selection of vocation by choice, selection which is directed not only by an individual's dominant interests and desires but also intelligently related to his qualifications and to the requirements of the vocation. There is wisdom in making initial selection from a large field of interest and later following it by a more specific choice as further knowledge and experience guide you. Intelligent self-guidance is the only sound guidance for a vocation. Self-guidance in progressive vocational decisions necessitates initial activity on your part, freedom and courage to make tentative decisions which can be modified with further knowledge, persistent activity in the analysis of self, and opportunities to obtain occupational information.

Choosing a Vocation

Most first choices and many final choices by college students are limited to four or five vocations, such as doctor, lawyer, engineer, dentist for boys, and stenographer and teacher for girls. In 1933 a study of vocational choices of 1,000 university students was reported in which 70 per cent of these students wished to enter three of the most crowded vocations in the United States, and 95 per cent wished to enter four of the overcrowded occupations in the metropolitan area. Why should young people limit their vocational choices to such a narrow scope? According to the report for 1930, of the United States Census Bureau there are some 20,000 tasks done by mankind. Adequate occupational information will broaden your interests and choices.

Occupational information can be obtained in several ways. The librarian will direct you to the last census report and to various bibliographies which list many references to occupational information. Search through card catalogues of your libraries. Seek different classifications of occupations from various points of view. Kitson (1931) gives the ninefold classification of the United States Census as follows: (1) agriculture, forestry, and animal husbandry; (2) extraction of minerals; (3) manufacturing and mechanical industries; (4) transportation; (5) trade; (6) public service; (7) professional service; (8) domestic and personal service; (9) clerical occupations. Detailed lists of specific occupations are given within each of these major groups.

Brewer (1932) refers to 87 occupations listed in the large occupational groups, and predicts that nine out of ten of the children now in school will choose these occupations. In a study of the choice of an occupation by the Yale Department of Personnel (1929) various types of occupational activity are presented from the point of view in which certain likes predominate, such as dealing with people either directly or indirectly, dealing with ideas, or dealing with things. These classifications are given here for your immediate reference.

I. Work dealing primarily with people.
  A. Dealing *directly* with people. Professions as medicine, ministry, law, personnel work in industry or in education, social service, teaching. Business as management, selling.

  B. Dealing *indirectly* with people. Advertising; journalism; phases of education as administration, public relations, investigations, etc.; social investigation and its applications; public relations work in certain phases of business and government.

II. Work dealing primarily with ideas.
  Many of those occupations listed above. Also invention; experimental, industrial, and scholarly research; many phases of pure science or pure engineering distinguished from applied science or applied engineering; artistic and creative professions as architecture, fine arts, creative literature, design, drama.

III. Work dealing primarily with things.
  A. Working with the thing itself in engineering and construction; technical or production side of manufacturing, production of natural resources, agriculture, forestry, transportation.

  B. Working with symbols of things. Accounting, statistical analysis, certain forms of research, drafting and designing; credit work; buying end of investment banking, actuarial insurance work.

  C. Work dealing with commercial exchange and impersonal distribution of things. Newspaper and direct mail advertising;

> the retail store; the department store; the chain store and mail order house; purchasing; trading companies, domestic and foreign (pp. 21–25).

In which of the above large occupational fields are you interested? You should try to choose that vocational field which will bring you the greatest amount of intrinsic enjoyment and satisfaction in performance of the task. Therefore obtain thorough information about the specific occupation in which you feel most interested. The identification of your genuine interest is a sound method of vocational choice and one which involves psychological distinctions.

Self-guidance and self-control. Fryer (1925) suggests the following necessary inquiries for vocational self-guidance. These inquiries are in harmony with suggestions made later by other leaders in guidance.

1. Functional character of the occupation. Define the work to your own satisfaction.
2. Extent of work: nation-wide as well as in your own community. Study the census for an understanding of opportunities numerically.
3. Social status of the work.
4. The working hours, the working week, the working season.
5. Age and sex predominance in the occupation.
6. Possible future development in the occupation.
7. Mechanical conditions under which the work is carried on, particularly as it relates to pleasant surroundings and health.
8. Monotony or variability of work.
9. Working hazards in the occupation.
10. Intrinsic satisfaction and values derived from work.
11. Remuneration and methods of compensation.
12. Physical and mental requirements of us by the occupation.
13. Educational demands (general) upon us by the occupation.
14. Specialized or vocational educational demands.
15. Experience requirements and the transferability of skill or experience to or from other occupations.
16. Methods of entrance into the work and opportunities for advancement (pp. 60–61).

Answers to these inquiries and others of your own may be found in books, journals, and magazines to which your librarian, personnel director, or vocational counselor will direct you. Many single volumes are written on one field of occupations giving specifications of the requirements of certain vocations and job analyses. Read (1934) discusses *The Profession of Forestry;* the Yale

Personnel volume (1929) gives information for nine occupational fields: architecture, education, forestry, government service, law, medicine, Christian ministry, field of engineering, and major divisions of the business field. Here you will find what the occupations are, necessary qualifications, preparation, advancement, and remuneration. Other detailed information can be obtained by trips to business houses, universities, and factories, from lectures about various occupations; and by direct conversation with people who are working in occupations which interest you. Talk with those who have made mistakes, and who are successful, whether disgruntled or content. Study biographies of those who have achieved and gone the path you wish to follow. Do not let anyone "sell" you an occupation. Make your own independent decision from all facts and direct experiences you have been able to obtain.

Occupational opportunities increase with the progress of civilization. During the last three decades many new occupations appeared in the automobile industry, in various branches of aviation, in radio, in bacteriology, dietetics, personnel departments, income tax accountancy, to mention only a few. Inventions give rise to new occupations. Research opens up new fields of study and activity. Science makes jobs, according to Compton (1934). He writes,

> Man has an irrepressible curiosity for new knowledge. This is the fundamental basis and urge for scientific work. Man has also an irrepressible desire to use his knowledge for the accomplishment of his desires. This is the basis of invention and of engineering. These, I believe, are so fundamentally a part of human psychology that they cannot be fettered, though their free exercise may of course be hampered or, on the other hand, be encouraged. . . . I believe that in the last analysis the extent of man's employment is governed by man's inherent desire and urge to do something (p. 300).

Pitkin (1934) expresses faith in man's ability to create his own jobs, and visions new occupational opportunities in home-town banking, home-town financing, interior decoration for middle-class homes, coöperative accounting, distribution, home economics, and as home-town managers and planners, home-town garden managers, coöperative agents, and agronomists.

It is folly to consider equipping yourself for only one vocation. There are many occupations anyone might undertake with the same general preparation, which are similar, with the exception of certain details within a reasonable range. A vocational career is always progressive, it never ends, and may necessitate transferring from one task to another. Second and third vocational choices may progress to first place unexpectedly.

Influential factors in vocational choices. Many influential factors are only temporary, such as a friendly interest in a person engaged in the occupation, sudden ambition, present necessity, apparent advantages, or an erroneous notion of one's chances based on knowledge that unusual persons have excelled. Other factors have more continuous influence, such as family tradition, sense of duty, one's fitness for the field of work, its social advantages, opportunities for advancement, fulfillment of one's desires for certain working conditions, satisfactory remuneration, and chances for improvement.

Kitson (1931) studied the reasons why 500 men enter vocations and found that 50 per cent were there by choice, 30 per cent by chance, 10 per cent because of necessity and other reasons, 9 per cent inherited the business, and only 1 per cent because of their parents' wishes. Parents' desires and the father's occupation do not influence vocational choices as much as might be expected. Kroger and Louttit (1935) found that 90 per cent of 4,543 high-school boys in Indianapolis expressed one occupational choice and only a very small number desired to follow their father's occupation. A larger percentage chose an occupation on a higher level than that of their father. The idealism of youth expressed itself in these preferences.

Remuneration for work is a most important factor in choice of a career, but it is by no means the essential guide in selection. The anticipated satisfaction and eager interest in doing a task are dominant influences in choice. As long as a living wage can be expected, satisfactions in lifework far outweigh the remuneration values in achievement. A professional man does not expect the riches acquired by his equal in the business world. Neither does he experience economic pressure that often leads to business ethics which may shock his cultural standards. Real success is derived from genuine interest and not from the pay envelope.

The most important factors in selection of that vocation which is to bring rich satisfactions and lasting pleasures are study and analysis of self through knowledge of one's qualifications in terms of intelligence, personality, interests, and special aptitudes. There is no royal road to the choice of a satisfactory vocational career. Promises are not fulfilled which come through the mediums of fortune-telling, astrology, palmistry, physiognomy, and so-called character analysis. Avoid these questionable avenues of vocational selection. Psychologists, for many years, have been developing scientific standards for estimating and evaluating an individual's traits for specific fields of vocational activity. The progress which has been made is serviceable in the hands of trained psychologists but very much misused in the hands of the untrained. The effectiveness of your own self-guidance will depend in great measure upon the knowledge you can obtain about yourself by means of measurements, psychological tests, ratings by self and by others, evaluated judgments by your superiors, and so on. Information about these possibilities of self-analysis can be obtained from members of the psychology department in your college or university, from vocational counselors in schools and cities, from personnel managers, or from members of the American Psychological Association.

Intelligence Tests

The conception of intelligence tests can be dated back as early as 1880 when Ebbinghaus was developing his tests of ability to memorize different materials, during the early stages of experimental psychology. Within the same period, Francis Galton, cousin of Charles Darwin, developed his tests of imagery and sensory discrimination in his efforts to investigate individual differences. These tests indicated a definite direction toward the first experimental stages of attempts to measure intelligence, to know how the minds of mathematicians, inventors, and artists work. The first use of the phrase "mental tests" was employed as early as 1890 by James McKeen Cattell in his description of tests used in his laboratory at the University of Pennsylvania.

It was not long until the influence of Alfred Binet, Fig. 34, a distinguished French psychologist, was felt. In 1905 he published a set of tests for young children in collaboration with a friend, Theodore Simon, for the purpose of practical application in measuring the degrees of brightness in children of the French elementary schools. He began by searching for problems and types of performance that would indicate a child's intelligent behavior, behavior that was largely native and little influenced by the child's knowledge and experience. When opportunity came for him to serve as a member of the committee to devise tests for segregating stupid children from those who were only lazy and not doing the work of the schools, the age was determined at which a child could do various tasks. From this time the influence of the Binet-Simon tests spread rapidly to this country. Their significance for studying the intelligent behavior of children will be considered in Chapter XVIII, and here we will discuss the significance of intelligence in the behavior of adults.

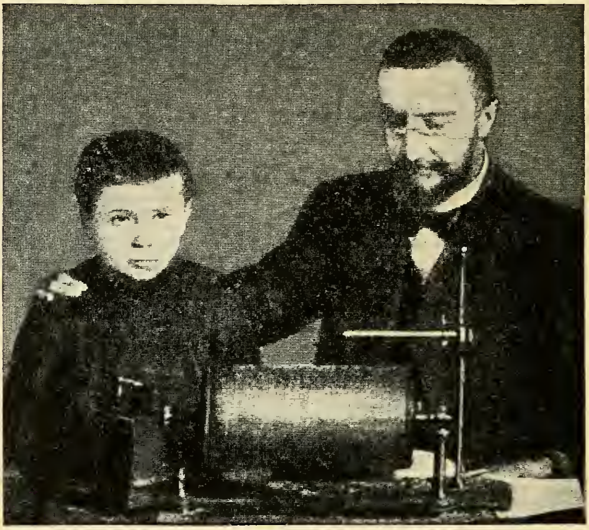

FIG. 34. Alfred Binet. From J. L. de Bancels, *Année psychol.*, 1911, vol. 18, p. 15.

Measurement of intelligence for classification. In 1917, a long-distance telephone call from Washington was received by a psychologist, in which a representative of the government inquired if psychologists could classify the thousands of recruits being drafted for the World War. Potential officer material needed to be differentiated from dull recruits whose ability as soldiers was questionable. This opportunity for practical application of intelligence tests produced two test forms referred to as Army Alpha and Army Beta, both of which are group tests and were given to many recruits at the same time. The Army Alpha, a verbal test for those who could read and write, was given to more than a million and a half men in the American army. The Army Beta, practically non-verbal and designed for illiterates and foreigners who were unable to understand English, was conducted in pantomime and with blackboard illustration.

The Army Alpha Intelligence Examination for literates presented eight general types of tests, other group verbal tests of the paper-and-pencil type have adopted similar problems to those of the Army Alpha. Samples of some general types of tests for adults used in various examinations are given here for your information.

(1) The synonym-antonym test in which you underscore the word *same* if the two words of a pair mean the same, the word *opposite* if the words mean opposite.

wet—dry	*same—opposite*
supercilious—disdainful	*same—opposite*

(2) The test of completing a number series, such as

3 6 8 16 18 36 ____
16 17 15 18 14 19 ____

(3) The analogies test in which you underline the word related in the same way to the third word that the second is to the first:

book—writer: statue—sculptor, liberty, picture, state
order—confusion: peace—part, treaty, war, enemy.

(4) The completions test in which the missing words are to be supplied so as to make the statement true or sensible.

The ____________ smelled the cheese but was too ________________ to put his head into the ________________.

Queen Anne was much ________________ to horse-racing, and not only ________________ royal plates to be ________________ for, ________ ran ________________ for them ________________.

(5) The vocabulary test in which the subject underlines the one word which means the same as the italicized word in the sentence.

The *temerity* of youth. cowardice, endurance, courage, wariness, rashness.
Clandestine meetings. frequent, secret, riotous, disgraceful, infrequent.
The *proletarian* class. wage-earning, elementary, advanced, incoming, aristocratic.

(6) The maze test, shown in Fig. 35 on page 308, in which you draw a continuous line in the most direct path from the entrance to the exit in the least possible time. Do not erase.

Verbal group tests of various kinds are used in elementary schools, high schools, colleges, industries, and occupational groups. These tests measure ability to grasp the meaning of words and respond to them verbally. Measurements of the intelligence of adults, although far from perfect, may not test all factors that are included in intelligent behavior, but they do represent a sample inventory of tasks involved in adaptability and adjustment to progressive living. They measure many of the cognitive processes of perception, attention, retention, recall, recognition, concrete and abstract thinking, and reasoning, which are fundamental in abstract intelligence. There are so many different kinds of behavior and adaptation necessary in dealing with ideas, things, and people, that we refer to the ability to manipulate symbols and ideas as indicative of *abstract intelligence;* the ability to manipulate things such as tools, materials, and so on as *mechanical intelligence;* the ability to work effectively with people as *social intelligence.* Naturally one overlaps the other, but in different situations either may dominate.

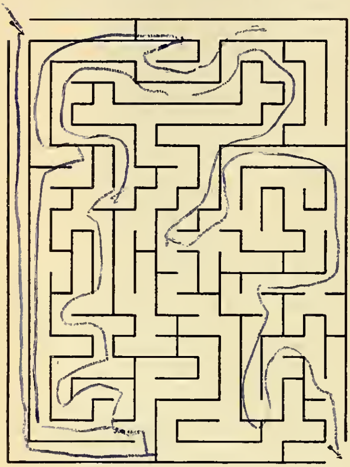

FIG. 35. A paper and pencil maze. From R. S. Woodworth, 1934, p. 57.

Efforts to test intelligent behavior are gradually revealing its essential nature, although the exact nature of intelligence is yet uncertain. Stern's definition of intelligence, the essence of which is referred to in literature frequently, states that it is "a general capacity of an individual consciously to adjust his thinking to new requirements; it is general mental adaptability to new problems and conditions of life." A differentiation is being made between general ability and special ability. If one person holds higher scores than others in all the tests of a series of measurements we are inclined to credit him with some general comprehensive ability which the others did not possess.

This general comprehensive ability or general mind power has been designated as the factor "G" by Charles Spearman of England. It is a scientific G which designates general ability apart from special ability. The intelligence tests now used may prove to be tests of special and group abilities in the use of ideas, numbers, and words more than general mental ability. Tests are now being developed by Spearman and his associates to measure this general mind power which many persons seem to possess in varying degrees. The factor G may have less control in cases where certain special abilities may be found, such as in music, and more control in cases where an individual is not only skilled in musical performance but may be a successful lawyer, scientist, or mechanic. This general mind power is something with which you are born. It may be found to be the mental side of what Lashley calls the "mass action" of the cortex of the brain. Its use may be easily enhanced when one is unusually interested in a task.

In the last decade more emphasis has been directed to the study and measurement of other aspects of individuality, since limitations of tests of abstract intelligence are fully recognized, such as social and mechanical intelligence, personality, attitudes, interests, and special vocational aptitudes. Some of these factors have been discussed in other chapters; vocational aptitudes and interests will be considered in a later section of this chapter.

The rôle of intelligence as measured by the Army Alpha test has been studied for many occupations represented by army men. Fryer (1925) made a notable adaptation of the minimum requirements of intelligence for these various occupational achievements from personnel records of the United States Army in a form which is well worth studying. The general and specific occupational levels of men according to their intelligence test scores are given in complete form by Fryer. Here we shall present the complete test score classification, all the general occupational levels, but only samples of the specific occupational levels, as presented by Fryer.

Test Score Classification	Occupational Level	
	General	Specific
A (very superior)	High professional	Editor, lawyer, college and high school teachers, engineer, and diplomat.
B (superior)	Professional	Journalist, physician, elementary school teacher, insurance salesman, chemist.
C+ (high average)	Technical	Stenographer, nurse, wholesale salesman, small merchant, railroad clerk.

Test Score Classification	Occupational Level	
	General	Specific
C (average)	Skilled	Locomotive engineer, telephone operator, policeman, laundryman, plumber, chauffeur.
C− (low average)	Semi- and low-skilled	Hospital attendant, mason, lumberman, shoemaker, sailor, and others.
D (inferior)	Unskilled	Fisherman, loader, lifter.
D− (very inferior)	Lowest unskilled	Laborer (simplest work).
E (useless)		No occupation.

These minimum intellectual levels vary on the average from the highest for professional men, not so high for technical and skilled workers, to the lowest for unskilled laborers. The spread of test scores within each of these occupational group levels is very great, which means that the least intelligent professional men might be excelled by the most intelligent laborers. This great overlapping in the intelligence scores of one occupational field with those in another occupational field naturally gives rise to many misfits in occupations. The person who is unsuccessful may be either in an occupation which is not demanding enough of his ability or in an occupation which is demanding more intelligence than he possesses. Higher average scores in Army Alpha are made by those persons who have had more training and experience in abstract thinking in terms of symbols. Therefore verbal tests of this nature may favor those skilled in the use of language in contrast to those not skilled in the use of language but skilled in motor and mechanical manipulation. In other words, the Army Alpha examination may be testing primarily abstract intelligence. In the interpretation of test results, it is important to keep in mind the differentiation of occupational groups and to supplement the test of abstract intelligence with tests of mechanical and social intelligence whenever desirable.

Success in college requires higher minimum intelligence than success in high school. The median score in the Alpha tests for college students is well above that for all the army occupational groups, with the exception of the professional classes. Specially prepared group intelligence examinations are now used in many colleges as part of the entrance routine. The range of scores often is given differential significance in entrance restrictions, as illustrated in the predictions applied in one college where the Thorndike Intelligence examination was used for high-school graduates. Students whose test scores occurred within any one of the six groups below were differentiated as follows:

- Group I. Worth admitting in entire disregard of technical deficiencies.
- Group II. Intellect enough to do collegiate and professional work with distinction.
- Group III. Intellect sufficient to obtain a college degree.
- Group IV. May be admitted if sufficiently in earnest and otherwise desirable.
- Group V. Should be admitted only if of extraordinary zeal or has suffered very great educational handicaps
- Group VI. Should not be admitted.

Similar predictive values may be determined in the future for levels in occupational proficiency in so far as the measured factor is proportionately significant for successful achievement in that particular occupation. Tentative limits of minimum or maximum intellectual ability can be proposed for the majority of persons who are expected not only to survive the occupation but to find adequate satisfaction in performance of the work.

Vocational Aptitude Tests

During the last decade considerable research and constructive effort have been put forth to develop tests which give indications of individual differences in factors other than intelligence which are essential for vocational progress. Most significant among these factors are special abilities demanded by work in broad fields, such as the scientific, literary, business, skilled trades, the arts, and so on. Tests which give an indication of ability to perform specific tasks peculiar to any particular vocation within these broad fields are designated as aptitude tests. The most serviceable aptitude tests are those which measure potentialities for the vocation apart from training.

Other tests which measure educational achievement and various levels of vocational training, referred to as tests of achievement and proficiency, should be distinguished from aptitude tests. "An aptitude test," says Hull (1928), "is a test designed to discover what potentiality a given person has for learning some particular vocation or acquiring some particular skill" (p. 50). In so far as aptitude tests are successful in measuring these potentialities, they reveal native capacities rather than acquired abilities. From the results of these aptitude tests, prediction of an individual's achievement can be made. It is perhaps impossible to discriminate absolutely between tests of native capacities, which are the potentialities for learning and development, and tests of abilities which result from these native capacities and are influenced by training; but some discrimination can be made and is worth while.

Tests of special aptitudes and abilities have been developed for the selection of men, such as mechanical ability, manual dexterity, clerical aptitudes, musical talent, the necessary motor coördination and reaction time for the manipulation of machinery, and so on. Ordway Tead refers to a number of companies—such as the General Electric, the Scoville Manufacturing Company, the Yellow Cab Company, Cheney Brothers, Eastman Kodak, and others—which have developed tests of special abilities required in the work of their factories, laboratories, and offices, and consider these tests significant in the improved selection of their employees. A similar selection of workers by means of standardized tests, rating blanks, interest and personality measurements, is taking place in large department stores, in educational institutions, and in special training and preparatory organizations.

How can you profit by these available methods of identifying your specific abilities for a particular vocation? The problem is relatively simple when once you have selected the company or the organization in which you wish to begin training. The problem is greater when you wish to determine your natural aptitudes for specific vocations such as chemistry, music, drawing, salesmanship, law, engineering, forestry, work in metal trades, and so on. There is so much need for advice and counsel in self-direction in these vocational problems that it behooves you to proceed with caution in obtaining your advice. Many pseudo-scientific and quack vocational "experts" have sprung up like mushroom growths during the depression years. Beware of them! Seek trustworthy and competent persons for advice as to where or to whom you might go for such vocational aptitude tests of your own abilities as are now available and dependable. Someone in the psychology department of the university, in the personnel department of a large company, or the research department of the public schools may be able to advise you. Whenever you have been in a special group tested for some particular purpose, obtain a conference, if possible, with the appropriate person who knows how to interpret your test results. During your educational training and vocational career obtain all the knowledge about yourself that you can from as many different angles as possible and from as many different selected persons as possible, for the purpose of knowing yourself better in relation to others and to your work.

Vocational success is not assured by favorable results of any tests in themselves apart from other factors. In the mechanical sphere, for example, lower levels of mechanical manipulation may require little intellectual ability, but higher levels may require greater intellectual ability, especially advanced levels of management and business where one must meet business obligations and plan future policies. For some occupations, too much intelligence as well as too little intelligence may be a disadvantage. Certain personality traits may be more essential in those vocations which necessitate working with people than for those which necessitate working with ideas and things. The progress which has been made in measurement of personality traits is considered in Chapter XV. Even though an apparent limit is found in educational achievement or occupational advance, which is predicted by objective information and knowledge of a person's total personality, this limit is known to be extended by one's genuine interest, intensity of motivation, and effective incentives. Therefore these influential factors need consideration in prediction of vocational success.

Significant progress has been made in the development of tests for vocational interest by Strong (1931, 1934). He has developed interest blanks for men and women in which each item is checked in taking the test, according to "like," "indifferent," or "dislike." These tests do not measure intelligence or school work but measure the extent to which one's interests agree or disagree with those of successful men in a given profession. When your own characteristic patterns of interest are determined from such a test, you obtain a suggestion of the profession in which you will feel yourself most congenially located and consequently most stimulated by the work. The interest pattern of doctors varies from that of lawyers, each differs from the salesman's and artist's. Up to the present time characteristic interest patterns can be determined from this test for 26 specific occupational groups, some of which are advertiser, lawyer, minister, teacher, accountant, salesmen, chemist, architect.

Changes in interests with age. An individual's expressed interests may vary from time to time, but the sum total of all interests has surprising stability. When over 400 separate interests are taken into account, Strong (1934) found that some changes in interest occur from 15 to 30 years of age, but the general pattern of interests continues throughout life. Thorndike (1935) obtained information concerning the change in interest for adults which occurred over the decades from ages 20 to 70 and concludes that there is only a slight decrease in the general volume of interest from the twenties to the fifties, and this decrease is restricted largely to physical activities.

There are various forms of trade tests used primarily to test trade knowledge and proficiency rather than unlearned reactions or native capacity. Several methods of vocational test procedure are: (1) the method of performance on miniature or actual apparatus, (2) the analogy method, and (3) the analytic method. The first method of performance on miniature or actual apparatus proves very expensive to devise and administer, hence there are few instances of its use.

The second method, that of analogy, calls forth very much the same "mental attitude" and "muscular coördination" as that demanded in the actual occupational experience. Viteles' (1925) test for selection of motormen is a typical example, Fig. 36. A system of signals is thrown on the screen to which the operator responds by his use of hand and foot levers. Many complicated functions are involved in a test of this nature. The analogy method involves an analysis of the work elements and of tests which permit any potential capacity to be revealed along with learned reactions from training. Among those tests are the performance trade tests which reveal certain mechanical skills, such as tests of manual dexterity and mechanical aptitudes. Examples of these tests are: (1) the Stenquist test for mechanical aptitude, used extensively for the soldiers, in trade schools, and industries; and (2) the Minnesota manual dexterity test and mechanical assembly test used extensively in employment offices, placement bureaus, and industries. In order to predict levels of occupational achievement it is necessary to know from the test point of view what certain individuals, whose scores are known for these tests, have achieved in the mechanical trades. Likewise it is essential to know from the occupational point of view what those individuals, who are rated very high or very low in their occupation, can do in these tests of mechanical abilities.

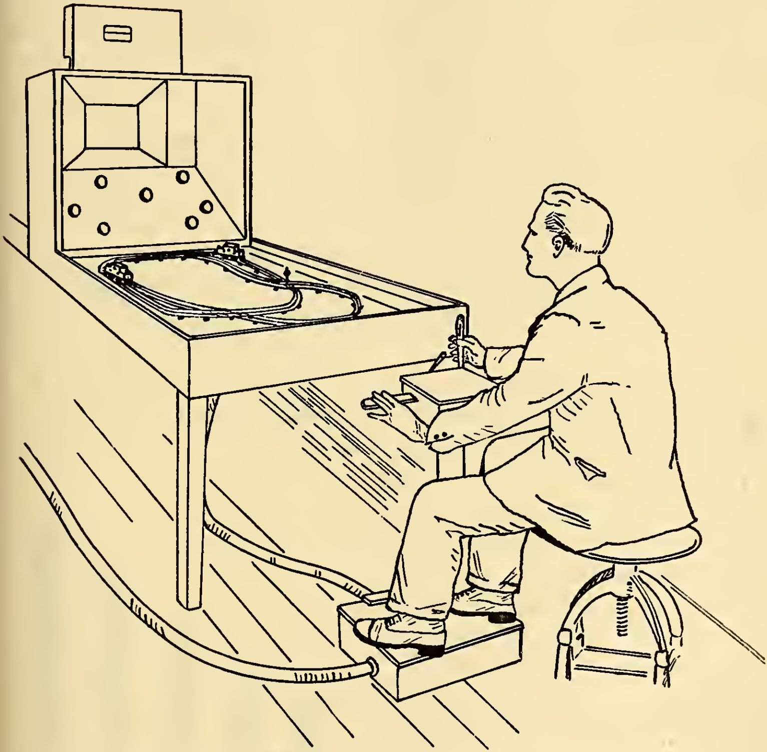

FIG. 36. Viteles' test for selection of motormen. From M. S. Viteles, 1925.

The third method, the analytic, of vocational test procedure is excellently illustrated by the Seashore Measurements of Musical Talent. Musical talent is not considered one composite talent, but a hierarchy of talents which Seashore (1919) analyzed into five main groups: musical sensitivity, musical action, musical memory and imagination, musical intelligence, and musical feeling. These five main groups were further classified into 24 specific capacities. Tests have been experimentally developed and standardized for many of these capacities. The results of these tests for any one person are shown in the form of a profile or psychograph, Fig. 37, which is a typical profile of average musical ability. In order to obtain as near a "picture" as possible of the totality of factors which enter into musical expression and appreciation, questionnaires and rating blanks are used to supplement various tests included in the musical talent profile. Certain group tests which may be given to groups of children or adults at the same time comprise the battery of the Seashore tests, which are the tests of pitch, intensity, time, consonance, tonal memory, and rhythm.

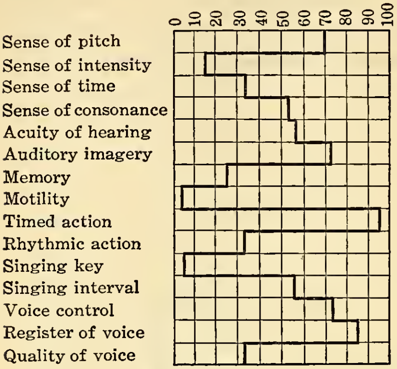

FIG. 37. An individual's profile of musical talent. From C. E. Seashore, 1919, p. 25.

Stanton (1935) sums up a decade of practical application of these group tests of musical talent in a university music school where the achievement of music students over a period of time was compared directly with the profile of musical talent of these same students. These tests come as near to the measurement of innate or potential capacities as it is possible to attain with the advance of research at the present time. Since results from these tests are little, if any, affected by musical training and general development, they provide a means by which the prediction of musical achievement can be made. In Fig. 38 the results of prediction are shown over an eight-year period for nearly 600 college music students, who were tested with the music tests and a com-

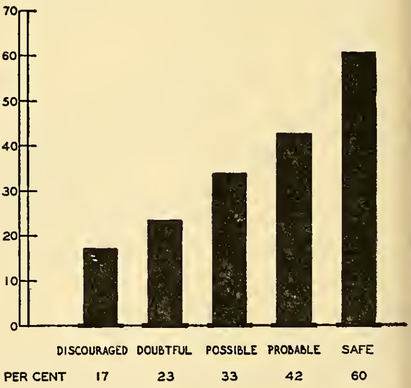

FIG. 38. The percentage of students graduating within four years in each of the five predictive groups. N = 565 entrants in four successive classes in the university music school. From H. M. Stanton, 1935, p. 78.

prehension test (intellectual ability) at the beginning of their four-year courses. For experimental and scientific purposes the test scores were withheld from students and teachers. On the basis of these tests the students were classified at entrance into five differential groups of Safe, Probable, Possible, Doubtful, and Discouraged. When the natural time had elapsed for their expected graduation it was found that only 17 per cent of the Discouraged students were graduated as compared with 60 per cent of the Safe students. Differential prediction is suggested as follows:

> At the present time, other things being equal, the music degree students whose tests classify them as Safe students can be told at entrance, "You have 60 chances out of a hundred that you will be graduated"; the Probable students, "You have about 42 chances out of a hundred that you will be graduated"; Possible students, "You have about 33 chances out of a hundred"; Doubtful students, "You have 23 chances out of a hundred"; Discouraged students, "You have about 17 chances out of a hundred that you will be graduated" (p. 78).

Various methods of procedure in development of vocational tests for practical use furnish intensive and extensive material for further research. With the advance that has been made, you can obtain more of an evaluation of your strong and weak points from some of the vocational aptitude tests than from personal opinion or experience. Self-discovery is the first and essential step toward self-direction in the choice of a vocation, and certain tests are useful to help you to know yourself in relation to others. Supplement the knowledge you may obtain of yourself from tests of intelligence, personality, vocational aptitude, interest and attitude, by ratings of yourself made by yourself, as well as by others, on specially prepared rating scales. This information may help you select the vocational field in which you wish to concentrate for your education and training, and in which you hope to experience the greatest satisfaction while at work.

How to Get a Job

In consideration of this important turning point in anyone's life history, the time when a new technique must be applied to the task of getting a job, we are concerned primarily with the first job or the beginning of a career. Some experiences which hundreds of college graduates have in obtaining their first employment, and the experience of employers who directly contact these young people, are brought together in the following paragraphs. Gradually, and especially during the depression when openings were scarce—yet many graduates began work, certain principles became crystallized which may serve as a guide for the novice.

The avenues through which one works in obtaining positions are usually (1) friends, relatives, and acquaintances; (2) letters or visits to the firm or company; (3) advertisements for "help wanted" or "situations wanted"; (4) placement bureaus of colleges; (5) employment agencies, private, city, and state; (6) civil service announcements; (7) general notices of new business enterprises in magazines, journals, merchandising news, and so forth. The majority of individuals secure their first employment on their own initiative rather than through agencies. Several reports of surveys to investigate the technique which was used stress the importance of friends and relatives, although adequate surveys are lacking to verify the fact that these mediums are the most frequently effective. More graduates would no doubt profit by the immediate connections made with positions through members of their family and relatives if they were willing to work near them. After college days many graduates long "to try their wings" away from home and kin. Therefore they make use of college placement bureaus, reliable employment bureaus, unsolicited letters, and personal visits. When one tries to obtain employment away from friends and relatives, the farther away he applies for a job from his home community the less are his chances of obtaining one. A family business offers great advantages to young people, not only in assuring immediate employment but also often favoring more rapid advancement. When a family business does not exist, do not hesitate to tell your friends you are hunting for a job.

In the progress of locating work the first essential step is to make a personal inventory of your own abilities, skills, and interests. Make a list of the things you have done, those that you know you can do, and those you wish most to do. Then arrange them in order of preference with those most desirable and possible at the top of the list, possible in the sense that you have the qualifications necessary for progress in the work.

In a search for an employer prepare a list of all the possible firms, companies, or organizations in which you intend to try to sell your services, which are located within or near the desired community. Study these companies, their products, the policies of those in control. Learn all you can about them. Visit them to discover if you have any acquaintances there; if not, develop an acquaintance. Secure the names of one or two persons in the company to whom you might go directly. The arrangement for an appointment can be made through a friend or directly by telephone.

Jobs occasionally are made for the young man who is healthy, clear-eyed, appropriately groomed, and conducts himself with a serious, courteous dignity. Employers also are concerned with college records and in scholarship on the campus. Men who are graduated in upper scholarship groups have employment records of higher median increase in salaries, which implies advancement and success. In the American Telephone and Telegraph Company the scholastic records and business success were studied for 3,086 college graduates. It was concluded ". . . good scholarship, campus achievement, early graduation, in that order are significant indices of success in the Bell system."

When letters of application are necessary, they need to be prepared with the greatest care. They serve as your first representative. Be sure they are "ambassadors" to do you credit. It may seem trite to you to dwell upon letters which you send during the process of securing a position, but herein lies one of the frequent sources of disappointment. The applicant or writer is free to choose the content of the letter and is responsible for its general character and appearance, but rarely has he received any training in this important task. Ask a competent and experienced person for help in the organization of such a letter, and for continual criticism until it is exactly right as to form and appearance, vocabulary, spelling, stationery, proportionate space given to necessary topics and so forth. Regular application blanks usually ask for the following items of information: your personal history, which usually includes address and telephone number, date and place of birth; your height and weight; religious preference; race; health; education; training; employment record; and references.

Uhrbrock (1935) analyzed 500 letters of application written by college graduates, and reports that 82 per cent contained one or more misspelled words, some addresses were not indicated, and in a few, no names were signed. He tells of a young chemist who asked for help in preparing his letter of application. The first draft was criticized and the letter revised eleven times. Every word, sentence, and paragraph was scrutinized, the size of the margin determined, good quality of paper and clean typewriter with a new ribbon were used. Even the method of folding the letter was discussed. Personal history data were typed on a separate sheet and inclosed. One hundred copies of the letter were sent out to a selected list of employers. From replies to half of them, six were favorable and led to interviews. In one interview a job was offered. This is roughly suggestive of the experience with carefully planned and executed letters.

An interview might be more successful for many individuals if certain appropriate principles were known and applied. Your personal appearance and conduct during an interview should be criticized and modified so that the essential qualities for a right first impression are fulfilled. A young man who feels well-groomed for an interview wears the suit, shoes, socks, tie, and shirt appropriate for the occasion. His suit is pressed, all linen fresh and clean, and shoes polished. With a bath and shave shortly before the interview, manicured and clean nails, hair neat and recently cut, he feels more self-confident than he would feel otherwise. This feeling has a sound psychological effect on his conduct during the interview. A young woman's appearance likewise should be appropriate. Interviews with several employers may occur before you feel the self-confidence and poise desirable. Never permit a parent or a friend to accompany you to an interview.

The more you are prepared for an interview with the necessary information and with the concise and clearly thought-out form in which you will present it so as to save the employer's time, the sooner you will feel self-control over the direction of your thinking during the interview. Do not talk too much, no more than half the time is justly yours. The interview is a conversation with a purpose. Do not show off, but convey the feeling of interest and enthusiasm for the work which you are seeking. Remember that you are an applicant for the position and not favoring the company by accepting the position it may offer you. Overfamiliarity in any manner is a disadvantage. Whether or not a position is offered you, if the employer has expressed any interest in your ambitions ask him if he will advise you where to go for the work you wish to begin, or what would be your next move? If his advice is helpful in your progress toward a job, it is gratifying to him to be informed that his suggestion was helpful.

Be prepared to fill in an application blank at an interview and to answer each question honestly and thoroughly, also be ready to take any tests. Many college graduates are advised to get on someone's pay roll rather than remain unemployed at this time, but avoid dead-end jobs if possible. Too much compensation at the beginning, or a job with no possibility of advancement, are detrimental to progress. Persistent endeavor in seeing hundreds of persons who are employing men or know of others who are; keeping in touch with placement bureaus or with municipal, state, and federal employment organizations, will lead eventually to some position in which you may feel a gleam of hope for the future. It takes hard work and lots of energy to conduct such a campaign, only a few points of which we have touched upon.

Rejections of college men are due to various reasons, some of which are reported by Uhrbrock (1935). A few are the careless letter of application; unfavorable impressions at interviews; even a bias toward mustaches or too much make-up; discrepancies between the oral report of the college record given by the applicant and the written report in the college transcript; confusion of matters of opinion with facts; critical or abusive references toward a former employer; suggestive stories which are out of place; a too aggressive parent accompanying the applicant and answering the questions; and too great an emphasis on the pay envelope rather than ambition for a career.

How to Hold a Job

The first year or two in an occupation is a time of orientation and mental adjustment. There are many changes and shifts during this early period of a vocational career. The gap between college and a profession, business, or industry is great. This is due for the most part to the shift from concentration upon you as an individual while in college, to that of the organization in which you are employed in later life.

There can be marked changes in the environment surrounding an occupation, both physically and socially. Protective influences in the world are much less than those in college. To what extent the social level of an occupation affects one's choice and later morale is not known. No doubt occupational prestige of some professions carries considerable weight. In a recent study of this influence 450 judges arranged 25 different occupations in the order in which they merited their respect and admiration. A sample sequence from high to low status was: physician, United States senator, professor, lawyer, civil engineer, dentist, clergyman, high-school teacher, factory manager, merchant, salesman, nurse, actor, mail carrier, garage mechanic, tailor, bricklayer, baker, policeman, plumber, miner, barber, cook, fisherman.

Progress is slower after graduation, courses are not definitely planned and completed at a stated time, there is no periodic assurance of progress from one's superiors in the form of objective marks or estimates. The psychological effect of these changes is often evident in restlessness, impatience, irritability, in demands of the new situation which seem vague and indefinable yet urgent and persistent. It may take all the courage and energy you can muster to be able to hold on in the impersonal situation. Your concern now becomes that of the well-being of your patients, the hazards of life for your clients, the fortunes of your associates, the prosperity of your company. It takes months and sometimes years to identify yourself with initial tasks of your first position, to live within each day and not entirely within imaginary hopes of the future, to feel yourself content in work above which you may have been educated.

The seasoning process may last a long time in many companies. The great turnover of college graduates which occurs in business can easily be due to an unjustifiable impatience. The wage or salary advance is often less than expected, it is natural to anticipate progress in the light of the exceptional business man, rather than that of the average. A satisfactory rate of vocational advancement with anticipated wage increase has not been determined for many occupations. Among the various vocational ladders developed by Kitson (1931) is the following one for army officers (p. 102):

RANK	AGE	SALARY (DOLLARS)
Major General	60	9,872
Brigadier General	55	7,872
Colonel	53	7,872
Lieutenant Colonel	50	7,163
Major	45	5,898
Captain	36	4,272
First Lieutenant	29	3,352
Second Lieutenant	23	2,196

The Yale Personnel study (1929) reports the actual salary progress of over 7,000 college graduates in business, Fig. 39. The most successful group (upper half) had a salary range at the end of five years between $2,800 and $4,000; and at the end of ten years between $4,000 and $7,000. From this chart it looks as though those who made a careful initial choice within two years of their graduation and stayed by the company profited more by salary advancements. An initial salary the first year for many college graduates is as low as $1,250. At your first opportunity study the wage and salary plans with scheduled increases for various companies in order to adjust your thinking to your own particular situation.

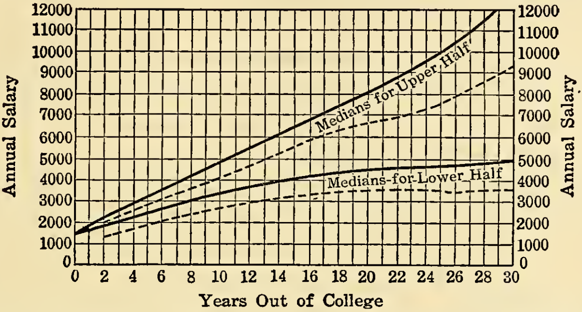

Fig. 39. The analysis of the salary progress of over 7,000 college graduates in industry. From the Yale Personnel Study, 1929, p. 14.

An employer or executive is always on the lookout for persons who can be advanced when opportunity comes. It takes study, initiative, and constant effort to learn more about the business, industry, or college in which you are employed. Ideas which will improve a product or a method of procedure, or make more money for the organization, will be an important step in any person's advancement. Never withhold any salient points in the presentation of a new procedure to your employer. The advance of your company or university will mean your own self-improvement. However, do not expect favors or promotion early in your career.

Davis (1931) tells of the investigation made by the Carnegie Foundation for the Advancement of Teaching in which a large number of engineers was asked to answer this question: "What are the most important factors in determining probable success or failure in engineering?" From 1,500 replies, personal qualities were mentioned seven times as frequently as the knowledge of engineering science and technique of practice. The essential factors in these replies, determined by the frequency of their occurrence, were listed in order of importance, as given below, and sent to 30,000 members of four large engineering societies.

1. *Character*, integrity, responsibility, resourcefulness, initiative.
2. *Judgment*, common sense, scientific attitude, perspective.
3. *Efficiency*, thoroughness, accuracy, industry.
4. *Understanding of men*, executive ability.
5. *Knowledge* of the fundamentals of engineering.
6. *Technique* of practice and business.

More than 7,000 engineers replied to this request and their votes placed the character group at the head of the list by a majority of 94.5 per cent, while technique was voted to the bottom by an equally decisive majority.

Babson (1933) classifies employees into four groups suggestive of the order in which they may either lose their job or hold on to their job: (1) the indifferent group of employees with no interest in the company except to draw their pay; (2) the combative group always carrying a chip on their shoulders; (3) the yes-yes group which makes a hit with the boss by agreeing with all he says; and (4) the manly group which is truly interested. He characterizes this last group as follows: they put their heart and soul into it, consider their work an opportunity for service; they are at the office fifteen minutes before time, mind their own business until asked questions, enjoy work; they are honest, interested in others, coöperative, attend church regularly, have initiative and courage, accept responsibility, and wait patiently for opportunity to come.

Several sides of the picture have been presented in this chapter from scientific studies and from personal opinion. Add to some of these worth-while ideas the suggestions we considered in Chapter XIII, and glean from such a selection those that you would consider applicable to yourself for your own particular situation. Holding a job is not difficult if you are genuinely interested in the work, can curb your enthusiasm without destroying it, and succeed in being sufficiently humble and unobtrusive mentally and socially. The selection of a vocation for which you are best fitted is the key which will open the most satisfactory pathways for your happiness at work and during hours away from work.

Questions for Yourself:

1. Have you selected your vocational field? If so, identify the specific occupations it offers for the purpose of preparing yourself in two or more of its occupational opportunities.

If you have not yet decided upon your vocation, plan and initiate a program of inquiry to discover your interests and aptitudes.

2. Do your likes for certain occupations predominate in activities dealing with people, with ideas, or with things?

3. Do you know your own results in standardized measurements, tests, and ratings in which you have participated since beginning college? Obtain these results, not alone as a figure or letter, but with their meaningful interpretation given by a qualified person who is capable of explaining the particular significance of these test results.

4. Analyze your own experience in obtaining your first temporary employment and your success in holding it. Wherein did you gain or lose?

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CHAPTER XV

PERSONALITY

Psychology is manifesting a great interest in the human individual *in toto*, and the unique integration everyone manifests when he functions as a person. We are calling this more or less integrated unit *personality*, because it is a property only of persons. It is an old term, and like all old terms seems to have encrusted itself with a great many meanings. Almost anyone finds it difficult to tell what personality is, although everyone believes that he knows what it is. If every reader would write down his idea of what he thinks personality consists, we would have results ranging from the lately popular conception indicated by the laconic "it" to long treatises telling about the soul.

Writers for magazines, cinema, and drama tend to overstress the rôle of sex-appeal in personality. But the absurdity of such a narrow limitation for personality is now being recognized. To be sure, sex may enter into the sum total according to the nature of the individual experience, but it is after all only a part which cannot be emphasized to the exclusion of the other equally important parts. Current literature, then, cannot be depended upon to give an unbiased definition of personality.

Those philosophically or religiously inclined would discuss the soul as that unique something which lifts man above the brutes, but the soul is too immaterial and unobservable to serve as a satisfactory substitute for the more definitely observable personality. Every person has personality, whether desirable or undesirable, whether much or little. According to Robinson (1932), "The infant has it only vaguely and potentially; the dead man has no personality at all."

Descriptions and definitions of terms like personality are often tinged with the bias of the person formulating them. This practice is not to be condemned, necessarily, but it should be recognized and taken into account in trying to understand any subject. In attempting to define personality some psychologists stress specifically individual and personal qualities while others stress social values. The definitions range from the original Latin *persona*, meaning a mask through which an actor recited his lines, to the most complex omnibus definition of personality which attempts to include the various aspects of the total human being functioning in the social situation. These omnibus definitions usually contain the idea of a "sum-total," "composite," or "ensemble" of traits and tendencies both native and acquired, frequently considered as an integration, organization, or unity. Warren and Carmichael (1930) write that "Personality is the entire mental organization of a human being at any stage of his development. It embraces every phase of human character: intellect, temperament, skill, and morality, and every attitude that has been built up in one's life."

Bridges' (1932) definition is even more comprehensive: "Personality is that which characterizes, constitutes, and distinguishes a human being. It is the totality of all physical and mental characteristics, traits and processes and their interrelationships." Robinson (1932) suggests that "When we talk about a man's personality, we do refer to a composite of many traits rather than to any single nucleus of his mind, but we are concerned with the composite of only those traits which have an outstanding importance in determining the individual's adjustment to the social world in which he lives." This idea of personality as the social stimulus value of the human being is also stressed by the social psychologist and the sociologist. Whether or not the social aspect is stressed, we may regard a man's personality with Robinson as "a collection of capacities, habits, attitudes, which distinguish him from other men and importantly influence his success and failure in life."

Woodworth (1934) emphasizes not only the totality of the behavior in personality, but also the style of the behavior. It is the individual's characteristic style of action which gives to each act its peculiar quality. This particular quality may be considered as a trait such as cheerfulness or self-reliance, but the personality is more than merely a sum of the traits; there must also be unity as well as summation. Therefore merely naming personality traits can give only a rough characterization of the personality. You may describe a person as cheerful and as self-reliant, but you describe him better as cheerfully self-reliant.

Roback (1931) states his position tersely when he writes "personality means an *integrative combination of all our cognitive* *(knowledge), affective (feeling) and conative (volitional) and even physical qualities.* Every quality, in its *operative* phase, and in relation to other qualities, enters into this complex whole. And herein lies the difference between the psychological approach and the general notion: that while the latter usually singles out one item and elevates it to the ruling concept, the former treats all the qualities as a complex integration, *Gestalt*, or configuration working, as a rule, more or less harmoniously, but occasionally in the direction of discord." He understands temperament to be the "*sum-total or blend of one's affective qualities as they impress others*"; and character to be "that part of personality which coincides with the *volitional and inhibitory phases* of behavior."

Considerable time might be spent profitably in examining other equally good definitions, but those cited show the trend and scope of various investigations and indicate some of the things we are considering in this chapter.

METHODS OF ANALYZING AND MEASURING PERSONALITY TRAITS

If you try to analyze the personality of an individual, you find yourself using such words as cheerful, dull, cruel, cowardly, happy, timid, honest. Each of these seems to be a descriptive term for some trait which not only is a part of the personality but which also seems to be sufficiently marked or emphasized to color other traits. Many descriptive terms, given in response to numerous questions asked about a person, describe relatively permanent characteristics or features, while others describe more temporary responses resembling attitudes rather than traits. There is a tendency to confuse attitudes and traits. Allport (1935) presents a discussion of their relation which clarifies the difference.

> An attitude ordinarily has a well-defined object of reference. The object may be material or it may be conceptual, but in any case it can usually be designated with considerable assurance. . . . besides having a definite object of reference, an attitude usually has a clear "direction." It represents a tendency to act in favor of, opposed to, in behalf of, or in contradiction to, the object with which it is related . . . a trait, in short, is man's personal and unique manner of responding to the myriad circumstances of life; it has very little reference to objects, for innumerable objects will arouse it. An individual's point of view toward war, liquor, the church, or capital punishment are clearly attitudes, and not traits; but his talkative, shy, or emphatic *manner* of behaving

> are traits. The former are clearly less intimate and less personal than the latter . . . (p. 826).

Analyzing personality into its various traits is quite as difficult as attempting to define it. Personality manifests itself in such a variety of ways that many avenues of investigation are open. May (1934) discussed six ways of finding out about the personality of an individual: (1) through records left in letters and other writings, school grades, written applications, and so on; (2) reputation; (3) direct observation of physical appearance, expressive movements including vocal expression, and actual conduct; (4) personal interview; (5) psychological tests of various aspects, such as intelligence, special abilities, talents and aptitudes, instincts and emotions, social adjustments, educational achievement, moral knowledge and conduct such as honesty, coöperation, generosity, courage, will power, self-control, appreciation in art, music, and literature, likes and dislikes, social attitudes, opinions and beliefs, interests, as well as the more general personality test presented in the questionnaire; (6) experiment in the laboratory and workshop under precise and controlled conditions.

Various traits which seem to have direct bearing upon personality may be classified conveniently for discussion as physical aspects, mental traits, capacities and abilities other than intellectual ones, temperament, and character.

The physical aspects of an individual are easily observed and are usually definitely associated with the personality. You like or dislike certain people because you have associated a physical trait with some personality trait, such as, fat people are good-natured, chinless people are weak. If you have ever examined the authenticity of such beliefs, you have found little or no evidence that anatomical characteristics have any fixed relation to specific personality traits. In spite of this lack of correspondence, however, phrenology, physiognomy, and palmistry still flourish in a surprising manner among the gullible and the "intellectual underworld." Regardless of how cleverly they have clothed themselves in the trappings of science, they are all pseudo-sciences at best, and with astrology and alchemy should be regarded as of historical interest only, or as merely amusing. As indicators of personality traits they have no value.

However, physical traits in so far as they are related to health and vigor, general appearance and personal efficiency, do have their influence upon the personality of the individual. Sensitivity, dexterity, speed, and other bodily activities are important in determining how effectively the individual will function in his environment. Some investigators are finding a relationship between general physique and certain mental aspects of personality in the abnormal field, but in the normal fields the relationship is less evident.

Mental traits such as intelligence, and the ability to perceive, imagine, remember, reason, form judgments, attend, quite definitely enter into the personality pattern. Intellectual powers so much affect the control we exercise over ourselves and others that they may therefore be expected to play a large part in forming personality. However, a keen intelligence does not guarantee the possessor an attractive personality. It is merely a phase, and its importance is dependent not only upon the amount and quality of intelligence but also upon its integration with other traits. Intelligence is important in personality in proportion to the use we make of it in the direction and control of our behavior. If it provides us with knowledge and insight to understand our activities not only in relation to ourselves but to others, and with judgment and imagination to think of and effect worth-while changes, it can facilitate the development of an attractive personality.

Capacities and abilities other than intellectual ones also have their part to play in personality. They may serve as the medium through which intelligence functions most effectively, or they may be quite independent of intelligence in their expression. Using abilities and skills may be a means of developing personality traits which would otherwise remain dormant or become a source of real difficulty through suppression. Cultivating a talent is a great aid in developing self-assurance and poise essential to successful social adjustment.

Temperament as a designation of the affective aspects of behavior is still as interesting to us as it was to the ancient Greeks. They observed the varying emotional behavior of people and divided them into four groups of sanguine, phlegmatic, choleric, and melancholic according to the preponderance of the four humors or fluids of the body, as known at the time. Present-day endocrinologists are giving a modern version of these ancient ideas, but have not as yet formulated as compact a scheme as the old fourfold one. This scheme seems to have intrenched itself in the literature of the world, and although the theory on which it was based has collapsed, we retain the metaphor. In the sanguine temperament the blood was the dominating fluid, and the characteristics were vivacity, light-heartedness, love of activity, hopefulness, rashness, and impatience. The phlegmatic temperament, with the lymph (or phlegm) in command, was quite the opposite of the sanguine, with such characteristics as slowness and avoidance of activity, dullness, gentleness, placidity, and weakness where sustained effort is required. The choleric temperament, with a preponderance of yellow bile, manifested the characteristics of energy, love of work, courage, ambition, and stubbornness. The melancholic temperament produced when the black bile was dominant presented characteristics of depression, sadness, reflection, humility, pessimism. Popular meanings and moral gradings have become attached to these terms in their progress down the ages.

Wilhelm Wundt viewed these classic terms in the light of the strength and speed of reaction. The sanguine temperament was weak and quick, while the choleric was strong and quick. The phlegmatic was weak and slow and the melancholic strong and slow. Dashiell (1928) gives the same classification with the emphasis on the emotions as strongly or weakly aroused. He gives the characteristics of temperament as quickness, intensity, stability, and emotional altitude. Others vary in their description, but the majority of investigators agree that temperament has to do with the emotional and feeling aspects of behavior as manifested in personality. The temperament may be described as calm, excitable, cheerful, gloomy, or what-not, but these terms all attempt to convey the affective tone which pervades the personality.

Character is another term with many varied and sometimes conflicting meanings. Some use it as a synonym for personality, but more often it is used as indicating the conative aspects of behavior. Volition is important in that the behavior is controlled and directed toward some ethical or moral goal. Impulse and action are prominent in the character aspects of personality, just as the feelings and emotions determine the temperamental aspects. Some authors successfully avoid using the term "character" in their discussion of personality, since they believe it should function as a purely evaluative concept.

Roback (1931) defines character as "an enduring psychophysical disposition to inhibit instinctive impulses in accordance with the regulative principle." This innate power of inhibition manifests itself in habits of controlling, or curbing impulses, and directing them into desired channels of expression. Bridges (1932) would have character dependent in large measure upon the habits of control acquired to regulate all important drives. It is conceivable that a system of habits stressing control or direction toward or away from behavior with specific social values would have a definite and marked influence on personality. Certainly the degree to which we have fostered this ability to control and direct our behavior affects our social stimulus value greatly. Ability to direct it toward socially acceptable and constructive goals increases the social stimulus value, while emphasis on antisocial or destructive aims decreases that value. Aside from the social stimulus value, the ability to control remains a most important factor in integration.

Balance and integration determine how effectively various traits will play their parts in personality. It must not be assumed that various traits of personality which we have classified for convenience under physical, intellectual, temperamental, and character or volitional aspects are distinct and separate entities. They may be examined as such, but they always function in relation to other factors. The effectiveness with which the contributing parts are organized and integrated determines the effectiveness of the whole. In this organization a certain balance is essential. If traits concerning the nutritive or life-sustaining aspects of behavior are overstressed, the personality may be skewed toward greediness, miserliness, or prodigality in all things concerned with survival. If the reproductive aspects are overstressed, behavior patterns overburdened with sexual concomitants will dominate the personality and affect the balance. The social wants may take an inordinate share of the activities at the expense of the nutritive or reproductive functions and skew the personality in that direction.

Bridges (1932) characterizes a person with an integrated or organized personality as one who "thinks, feels, and acts in unison. His thought is clear, his affective life stable, his impulses directed, and his activity purposive. He may be either broad or narrow, but he must be fairly well balanced if the whole personality is highly organized." The poorly integrated personality is "illogical, unstable, uncontrolled. His thoughts, feelings, and actions are piecemeal and unpredictable. He too may be broad or narrow in mental content, but he is certain to lack balance, since some aspects are sure to be more developed than others."

The measurement of personality has not reached the stage of development attained in intelligence testing, much as we would like to assume that it has. Quantitative data are particularly lacking, and those we have are difficult to translate into meaningful terms accurately describing personality. Strictly speaking, we are not measuring personality, since we have no unequivocal psychological measuring units like the more exact physical sciences display; but as Terman (1934) points out, we are exploring with tests to find out what we can about personality from the responses people make to them. By assigning a numerical value to these responses we give them an appearance of mathematical exactness which may not be warranted. Nevertheless, some quantification of data can be helpful to our understanding of such a complex concept as personality, provided we understand that such figures are not exact and fixed units but more or less rough estimates of the reaction being tested.

Various tests, purporting to measure personality traits, range from tests of intellectual capacity, through tests of special abilities, talents, and aptitudes, to tests of educational achievement and appreciation of art, music, and literature. Tests of emotional stability and of moral knowledge and conduct such as honesty, generosity, coöperation, will power, self-control, courage, and so on, are at once the interest and the despair of the "character" testers. The more socially-minded psychometers apply tests of social attitudes, opinions, and beliefs; or hope for enlightenment through tests revealing interests in occupations, games, or sports. Investigators cover the whole field of psychological testing in an effort to measure the various specific aspects of personality. Such widespread interest is justified on the assumption that every part contributes its share to the whole.

The more generalized questionnaire type of personality test is designed to gather information regarding the adjustment to environmental situations characteristic of the individual, and thereby arrive at some notion of the normal or abnormal aspects of his personality. Some of these purport to measure several diverse traits at the same time, but it is being discovered that too many burdens cannot be placed upon even a sturdy questionnaire. The questionnaire is popular partly because it is a fairly easy form to administer and when answered as truthfully as possible it can yield information to illuminate various aspects of the personality, although it does not yield actual quantitative data. As an instrument of accurate prediction, however, it leaves much to be desired, although as a diagnostic tool in the hands of a competent investigator it can be useful.

Another method whereby we attempt to get a "measure" of personality is by ratings of various characteristics such as courage, honesty, aggressiveness, modesty, humor, submissiveness, coöperation, and the like. A person can rate another fairly well on traits *seen* in action and have his rating agree fairly well with that of other judges, but traits dependent upon ideas, motives, and other inner activities are neither easily nor accurately rated. The value of a rating depends in large measure upon how intimately the judge knows the one rated, and how well trained he is as a judge. A competent rating is really the social evaluation of the trait or traits and as such has a real place in evaluating personality characteristics for which we have no more objective criteria. As a "measure," however, its inexactness must be recognized.

Self-rating schemes are of value in attempting to analyze one's own ability. Hyde's self-measurement is an early rating scheme which many students have found serviceable. Feder (1935) has condensed and adapted the Hyde scale into one for the investigation of the ethical self. Any scheme can be used which lists characteristics that influence one's success or failure, and can be serviceable to the degree that we can view ourselves impersonally and clearly. Unfortunately, we too often are inclined to overrate or underrate our own characteristics. We cannot "see ourselves as others see us." Even so, a well-planned self-rating scale is wholesome discipline to which to subject yourself now and then, if you do this honestly, with neither undue conceit nor modesty, and a sincere desire to know both your limitations and powers. Seashore (1923) gives a rating blank analyzing fitness for graduate study which is readily adaptable to other study. It is also well adapted to secure ratings from others who know you well enough to estimate fairly your rating on various traits. Seashore's rating blank includes the items of reasoning power, originality, memory, alertness, accuracy, language, application, coöperation, moral attitude, health, and zeal for investigation. Seashore and Seashore (1935) have adapted the Bell (1934) adjustment inventory to the use of one person. This inventory elicits information regarding the four aspects of personality revealed by home, health, social, and emotional adjustments.

Bennett (1935) gives a more comprehensive personality chart which if properly filled in by yourself and others who know you would be both interesting and informative. Roback's (1934) adaptation of the G. W. Allport technique presents a method of personalysis which the more serious student will find serviceable. These are merely a few of the more recent attempts to clarify this intricate problem of personality and its reduction to some quantitative terminology. The student will find no dearth of literature on the subject.

CORRELATION OF TRAITS

The terms *correlation* and *coefficient of correlation* will be encountered frequently in psychological literature. In general they refer to the relation existing between two measurable concomitants as computed by mathematical procedure. For example, if a large amount of trait A is always accompanied by a large amount of trait B in many persons, the co-relation will be considered positive and close. Computed by mathematical formulas the relationship may be expressed in numerical terms as a coefficient of correlation. The more nearly the coefficient approaches +1 the closer the co-relationship of traits A and B. If, however, trait A is always accompanied by an absence of trait B, the relationship is negative and the coefficient approaches −1. Perfect co-relationship, as well as complete absence of relationship, is rare. Usually the coefficient, designated by r when the Pearson formulas are used in the computation, falls somewhere between +1 and −1. An r of .30 or less indicates little or no relationship between the two traits or abilities compared. The coefficients should not be interpreted as percentages; an r of .35 does not indicate a relationship half as close as an r of .70. The r of .35 indicates little significant relationship, while the r of .70 indicates a significantly close relation between the traits.

No effort will be made to survey the various statistical attempts to find the relation between personality traits. In general, it yet remains an individual matter whether traits are always, sometimes, or rarely found together. We should like to think that intelligent people are always honest, or moral, or trustworthy, but there is no statistical evidence that this is always true. Of course, we know that the more intelligent people can more readily see the defects and stupidity of dishonest, unmoral, and untrustworthy behavior, and therefore should tend to avoid it. But we cannot say this man is very bright and therefore is very honest. If a man remembers names readily, we are inclined to credit him with remembering numbers with equal facility, but this may or may not be a valid assumption. A man may forget to return books borrowed and yet be scrupulously honest in money matters.

Thus argue the "specificists" who emphasize the specific elements in a behavior situation and the relation the individual has been trained to have toward them. On the other hand, those who believe that behavior is fairly independent of the specific nature of the situation will see a consistency in behavior dependent in large measure upon correlation and integration. For personality aspects a coefficient of integration would be a more descriptive and informative term than a coefficient of correlation between its specific parts. But as yet no such coefficient has emerged from the extensive statistical treatment accorded personality data.

Many investigators tend to recognize the marked consistency of behavior on the part of the individual. Although this consistency is not complete, it is sufficiently evident to be of real aid in understanding personality. If a person tends to have a practical attitude toward one situation, he is apt to have a similar attitude toward other situations. Or he may have a theoretical, religious, or political outlook which is reflected in his whole behavior and this, of course, affects his personality. Allport (1931, 1933) and his coworkers have investigated this aspect of personality with the *Study of Values*, a test for measuring Spranger's generalized interests discussed later in this chapter. In the report with Cantril (1933) the following conclusions are presented:

> Several experiments demonstrate a clear relationship between values and conduct. They show that a person's activity is not determined exclusively by the stimulus of the moment, nor by merely transitory interest, nor by a specific attitude peculiar to each situation which he encounters. The experiments prove, on the contrary, that *general*

> *evaluative attitudes* enter into various common activities of everyday life, and in so doing help to account for the consistencies of personality.

While these data indicate the existence of a more generalized function than the investigators who insist on specificity of function will admit, the best we can do as yet is to note with Katz (1935) that

> the individual can be classified as possessing not one but a number of generalized functions. General types of behavior exist, but no one general factor accounts for all the conduct of an individual. . . . The organisms can respond to the relations in situations with little regard for the specific content of the situation. This ability to respond to the same relation in varying stimulus settings is regarded as a general function which does not operate through specific elements (p. 527).

But, whatever the point of view or individual bias from which personality is studied, you know your own personality to be both the sum of your specific acts and abilities and the product which may be obtained from their integration. The specific parts may or may not correlate with one another, yet when integrated may produce consistent generalized behavior.

PERSONALITY DIFFERENCES, INDIVIDUAL, SEX, AND RACE

Individuals differ greatly in every aspect of behavior, and it is to be expected that they will differ as greatly in the final integration which we recognize as personality. Individuals differ not only from one another, but also show differences in behavior with different age levels and the particular situations in which they live. Fundamentally, these differences depend upon the way people control and direct the energy which they generate as living organisms.

Differences in specific phases of behavior are readily seen and many of them can be measured with considerable accuracy. In physical ability, we can measure how rapidly a man can run, what weight he can lift. We know that his physical movements tend to be clumsy, quick, or accurate. We know he is tall or short or any height between these extremes. In mental ability he may have any degree of intellectual capacity from idiocy to genius.

There is a marked tendency toward an either-or classification of both specific and general aspects which ignores the *and* relationship, particularly among traits which characterize general trends in personality. The relativity of traits in the situational aspects is also frequently disregarded. For instance, we call a man stupid when he may be stupid in only a specific situation where in relation to the behavior of others his behavior appears stupid. This arrangement of individuals tends towards oversimplification of personality in that we think we have classified personality when we have given it a name on some scale.

Not only must a characteristic be interpreted in terms of itself but also in terms of the relation between it and other concomitants in the total integration, and the environmental situation. For example, the trait of honesty may be highly desirable in some cultures and quite the opposite when dishonesty and thievery are considered right ways of making a living. This is only another way of saying that individual differences in every aspect of personality may be little or great, but the importance of this difference must be gauged in terms of the factors in the situation. Since all of us are not equally well provided with favorable personality traits, it may behoove us to avoid feelings of inferiority by compensation. Just as we try to compensate for lack of sight by better use of our other special senses, so too we may overcome the lack of an attractive face by developing interesting and vivacious conversational abilities.

Compensation is a method of adjustment common in greater or less degree to all. How this may function to influence personality is suggested by a quotation from Terman (1934) in which he reviews several points it may be worth while to remember in connection with either individual differences or in relation to the larger aspect of personality to which such differences are contributing factors.

> A true picture of a personality cannot be pieced together from any number of test scores. The total is an organismic, not an additive, total. Personality traits are not merely intercorrelated, but are functionally interactive in infinitely complex ways now little understood. This fact is familiar to us in the concept of compensation. The presence of inferiority feelings may give rise either to a chronic attitude of self-depreciation or, by over-compensation, to an attitude of boastfulness. Physical cowardice may give us either the typical coward or, by over-compensation, the foolhardy daredevil. The boy of naturally effeminate tastes and attitudes does not always develop into a sissy; he may cultivate the ways of the cave man and flaunt his masculinity. If one is naturally prone to form emotional prejudices, *and knows it*, one may succeed in becoming a Darwin of fairmindedness. One who is excessively

introverted does not ordinarily become a good salesman or an effective leader, but by taking thought he may become either. It is one of the great weaknesses of personality tests that they cannot discriminate between behavior attitudes that are the expression of the subject's natural personality characteristics and those that have been acquired by compensation or self-discipline. Moreover, the behavioral significance of a given amount of a particular trait is never equivocal; it is always dependent upon the other trait complexes in which it is imbedded.

Sex differences in personality may be expected whenever personality is the product of the culture of the group. Many traits have been called masculine because they have seemed to embody the traits peculiar to or desired by the male, just as another set have been designated feminine. Careful and unprejudiced investigation is showing that many of these traits are largely learned and have little foundation in innate characteristics. Just as many artificial lines drawn between the behavior of male and female break down when both are regarded as human beings, so also the lines of demarcation between masculine and feminine traits of personality are fading with the greater emphasis upon innate humanness.

Differences shown by the various personality inventories may be expected where the responses to such tests depend in large measure upon behavior conditioned by environmental conditions. Miles (1935) finds several points of difference between men and women indicated by the Bernreuter Personality Inventory, and the Allport *Study of Values*. A few of these points will be mentioned here to show the trend and type of these differences.

> Women rate higher on the neurotic scale which measures tendency to feel miserable, to be sensitive to blarney, troubled by useless thoughts, by shyness, and by feelings of inferiority. It measures further the tendency to feel shut off from other people, to day-dream, to worry over things that have happened and that may happen. . . .
>
> On the self-sufficiency scale the men rate higher, indicating the tendency for them to be able to be contented by themselves, to work alone, to depend on their own judgment in reaching decisions and in formulating plans.
>
> . . . women are exceeded by men on the dominance scale showing self-confidence, aggressiveness, and the ready assumption of a position in the foreground at social functions. High scores on this test are achieved by those who converse readily with strangers or with prominent people and suffer no feelings of inferiority when doing so. . . .
>
> Mean scores for the two sexes are quite distinctive . . . aesthetic,

> social, and religious values play a *relatively* more prominent rôle in the personalities of women than of men, and conversely that men are *relatively* stronger in theoretical, economical, and political interests (p. 743).

Tests of intelligence and special abilities provide another means of studying personality differences between sexes. The relative differences indicated by personality inventories may easily be changed by different social conditions and other trends in thought and activity of the two sexes. When the more specific aspects of personality are investigated by more technical and scientific procedure, the differences due to sex tend to grow less and disappear. There is no evidence of any important differences in intelligence between the sexes. Neither do the tests of special abilities and in the field of sensory acuity and the like give clear and consistent differences. Even in tests where strength is important, the differences are not as large as has been commonly assumed. It is interesting to note that many of the differences apparent in childhood and adolescence tend to disappear with maturity when men and women work under relatively equal or similar conditions.

Emotional aspects are not as easily observed as intellectual ones, and as yet we know with too little authenticity the rôle they play in personality. There is little or no evidence that basically there is any essential difference between an emotion in man and the same emotion in woman. There is a considerable body of tradition, of course, and observable manifestations may vary, but these may be entirely learned and conditioned by social usage. As yet we know of no essential reason why the female cannot control her activities quite as adequately and effectively as the male. Ability to control is a human characteristic held in varying degrees peculiar to the individual regardless of sex.

Racial differences in personality have also been dogmatized and traditionalized to a great extent. Exact and comprehensive measurements of racial traits are often meager or too restricted to yield scientific data. Great masses of data are being gathered from all over the world which, when adequately analyzed, can be expected to yield definite racial classifications that will bear scientific scrutiny. At present, classifications are often based on assumptions made from inaccurate observation of few cases.

Measurements have been made of samples of various races. Intelligence tests have been quite widely used with various races and nationalities, but the conclusions drawn must not be interpreted too literally as applying to the whole race. The tests themselves reflect too much of the cultural influence. When tests of more intangible traits, like honesty, are applied to racial groups, the inadequacies of such data are even more marked. Hartshorne and May (1932), from tests which measure the tendency to cheat, rank nationalities from most honest to most dishonest as follows: Scandinavian-Germanic, American-British, Jews, Italians, Slavs, negroes. However, they may be measuring social or cultural influences rather than innate racial differences.

Klineberg (1935) has examined the literature on race differences, but has found no scientific proof of inferiority or superiority due specifically to race. Excerpts from the practical implications given in the book suggest the trend of the information.

> The general conclusion of this book is that there is no scientific proof of racial differences in mentality. This does not necessarily mean that there are no such differences. . . . In the present state of our knowledge, however, we have no right to assume that they exist. . . . No one has been able to demonstrate that ability is correlated with skin color or head shape or any of the anatomical characteristics used to classify races. A man must be judged as an individual, not as a member of a group whose limits are arbitrary and artificial. Our racial and national stereotypes—the "pictures in our minds" of the Oriental, the Italian, the Jew, the Mexican—will be wrong much more than right; they are based on current opinions which have never been verified, and they cannot be trusted in the treatment of human beings (p. 345).

This problem of race differences, like many other questions, could be discussed pro and con, but for the time being it is more profitable to emphasize the importance of interpreting data in terms of the specific group from which it is obtained and the dangers of making unwarranted assumptions and faulty generalizations.

Classification of Personalities

One would expect from the literature that all mankind is neatly divided into only two groups. A more complicated system does not readily become popular. We assume we have described a personality type when we group individuals who have similar characteristics or who deviate from some central tendency. Some of the so-called types have been differentiated in the clinic where abnormal manifestations overemphasize and distort normal ones. Fitting the normal person into a classification of essentially abnormal activities is not only difficult but misleading. In considering any classification it is well to inquire on what data the "type" was established. Perhaps the inconsistencies and absurdities are not so much characteristics of the system as of the use we attempt to make of it. The concept of "type" is a serviceable one, if its limitations are regarded. We may arrive at a better understanding of personality through a brief consideration of some of the "types" most frequently discussed in the literature. It should be kept in mind that these types often reflect the particular angle of thought stressed by their originators. Those who wish to follow in greater detail the different personality types are referred to Murphy and Jensen (1933) who discuss various approaches to personality at considerable length. No attempt will be made to follow their interesting procedure here.

Attempts to classify personalities are not new. Before James classified philosophers as "tender minded" and "tough minded," Jordan had grouped people into "reflective" and "active" on the basis of the predominance of thought or action. Others suggest such dichotomous classes as sensory or motor, conservative or radical, feminine or masculine, and so on. Still others present classifications based on endocrine organization, body build, or maladjusted and abnormal behavior.

Aspects of personality which receive a great deal of attention are those growing out of individual differences in emotional adjustment and orientation. Jung is most often credited with the systematic classification of personality into *introverted* or *extroverted*, which indicates the direction of the flow of energy as either toward self or away from self. The introvert meets conflicts by turning energies toward an inner world of thought and fantasy and avoiding active participation in affairs of the world about him. The extrovert, however, directs his activities toward the objective world and avoids introspective consideration of his conflicts. He is the practical man of action; while the introvert thinks his way through. However, few of us are clearly one type or the other; most people show characteristics of both types, hence could well be called *ambiverted.*

Different writers emphasize the emotional, intellectual, and social aspects of introversion-extroversion. Some investigate the way emotions are expressed, or what some call the emotionality of the individual. The introvert seems to express his emotions less freely than the extrovert, hence presents a markedly different integration of personality traits. Others concern themselves primarily with the direction of interest of the individual. The introvert is self-centered, the extrovert is primarily interested in the world about him. Still others examine social adjustment as the key to personality. The introvert seems to show less ease and ability in meeting or working with others. Personality tests to indicate introversion or extroversion can be useful in the hands of informed and wise advisers, but again one feels impelled to warn against their overuse by those who assume too much and know too little. Both types of behavior are primarily developmental and as habit patterns are subject to modification. There is no basis to label one type of personality as better adjusted or more desirable than the other. Either may lead to extreme and abnormal manifestations; either may be a satisfactory and normal method of controlling behavior to meet the demands of living.

Those whose main interest lies in the social rather than the individual aspects view mankind as either leaders or followers. Those who tend to lead are the dominant personalities and those who follow are more submissive. Tests of *ascendance-submission* have been developed to measure these types of personality. But enough examples have been given of classifications of types which emphasize the tendency of classifiers to dichotomize.

Another approach to the classification of personality, which attempts to view the human being as a whole as he expresses his personality through values and purposes, is Spranger's (1928) six life forms which would divide men into the following types: (1) *theoretic,* characterized by the dominance of cognitive and conative processes and a disregard of the affective processes; (2) the *economic,* based on utility in relation to self-preservation and the satisfaction of needs and wants; (3) the *aesthetic,* dominated by feeling and imagination; (4) the *social,* characterized by interest in other people primarily for their value possibilities; (5) the *political,* dominated by the "will to power" or drive for self-assertion, not limited to political life; (6) the *religious,* emphasizing and seeking the highest values. Allport (1933) and others attempt to measure these various life-forms in their *Study of Values* previously referred to in this chapter.

Bridges (1932) would classify the various personalities as: (1) *primitive* or undeveloped type; (2) the *over-compensated* type, developed through repression and over-compensation, and (3) the *unfolded* type, developed by "acceptance, controlled expression, and unfolding of the inner potentialities in conformity with outer circumstances." Other types might be cited, but those presented serve to show among other things the extent of the field of investigation and the trends these investigations have taken.

INHERITANCE OF TRAITS

From the present accumulation of factual data it is well not to dogmatize regarding the inheritance of personality traits. We can suggest only possibilities and indicate trends in thought. Considerable data are extant regarding the inheritance of intellectual capacities. These would seem to indicate that intellectual traits of personality are inherited. Certain special talents also seem to be present in varying degrees in the inherited qualities with which we are endowed. We inherit physical and mental predispositions, but we do not know with any great assurance what part they play in making our personality patterns. Environment plays its part, but we know that its influence upon individuals varies greatly. From a practical point of view we need to recognize that, whatever propensities and potentialities we may have inherited, they are functioning through very complex and numerous systems of acquired habit patterns fostered by the environment. Our inherent abilities to control enable us to form our own personalities to a much greater extent than we wish to admit. We feel more comfortable if we can blame our violent display of temper on an ancestor, instead of assuming the responsibility implied in recognition of the fact that we have not learned to control our emotional behavior. For the moment let us get away from the either-this-or-that consideration, and regard heredity and environment as each contributing its share to the complex pattern of personality.

Personalities are both born and made. Innate abilities and physical prowess interact with environmental conditions to make a Mark Twain or a Will Rogers, an Abraham Lincoln or a Woodrow Wilson. Personality traits persist through widely differing environments. Biographies of great men who could "walk with kings, nor lose the common touch" are rich in examples of the persistence of personality traits. Woodworth (1934) cites the following excerpts with others from the biography of Mark Twain to illustrate the unity and continuity of personality.

> Mark Twain grew up in the semifrontier town of Hannibal, Missouri, on the Mississippi River. His father, a lawyer of high character and aspirations, was a poor money-getter, and the family was always close to poverty. His mother came of a family of optimistic people, full of projects for getting ahead, and was herself a woman of great vitality, courageous and outspoken, with a peculiar interesting drawl in her speech and the art of saying a humorous thing "with the perfect air of not knowing it to be humorous." Mark Twain resembled his mother in all these respects. . . . But his readers and hearers always suspected a joke, and would burst into laughter at his most serious statements. He had made his rôle and was held to it. Apparently he found his rôle even as a boy in his gang. Certainly his behavior shows continuity in spite of the varied environments in which he lived and the varied occupations in which he engaged. One should mention also certain personality traits which had much to do with his career and which were certainly biological or constitutional: his resilence and high spirits, his great endurance (he would play billiards all night without feeling tired) and his fulness of projects and disposition to take a chance (pp. 131–133).

THE SUPERIOR PERSONALITY

To develop a personality which is serviceable in living happily with our fellow men in the conditions surrounding us is a laudable aim for any human being. The superior personality is one in which the traits are well integrated and well balanced; in which the emotional and affective concomitants are controlled to enrich and broaden rather than to satiate or dominate enjoyment; in which knowledge is used and made an asset; in which social communication is easy and mutually enjoyable; in which right values predominate. Although made up of many concomitants, personality is more than the sum of them. Traits and parts may color or dominate our personalities, but underlying them is an integrated unity which is unique for each of us.

Questions for Yourself:

1. What characteristics of behavior do you have which aid in making your personality superior to that of your fellows? Inferior?
2. What is the primary direction of your interest, is it toward self or toward others?
3. Do you know the facilities your college has to help you improve undesirable personality traits?
4. Can you appraise your own personality traits objectively and fairly?

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CHAPTER XVI

BEHAVIOR HYGIENE

Behavior hygiene promotes activity leading to the satisfactory adjustment demonstrated by a sound mind in a sound body, and prevents maladjustments and their attendant difficulties. Behavior is regarded as both mental and physical activity, since mind and body are inextricably associated in every human being. For a considerable time hygiene has been concerned with the preservation and promotion of physical health, but during the last quarter of a century it has actively recognized the importance of mental health for wholesome and adequate living. Since behavior hygiene considers both mental and physical activity, it is inclusive of mental hygiene. In this chapter we will consider primarily those aspects of controlling the behavior of self which influence mental health.

MENTAL HYGIENE

More than a quarter of a century ago, Clifford W. Beers (1908) resumed control of his mental functions to such good purpose that he not only was able to record many of his experiences in his book, *The Mind That Found Itself*, but also was able to interest others in what has become known as the mental hygiene movement. At first designed to alleviate the plight of the insane, the movement was quickly enlarged to include the prevention of mental ill health.

Fortunately, for most of us prevention of insanity is a remote problem of only indirect concern. Our direct concern is to maintain as efficiently as possible the behavior patterns which will enable us to live comfortably as normal human beings. We do not eat, sleep, and exercise properly merely to prevent a diseased systemic condition, we do these things to make our bodies feel well. In the same way, we develop patterns of behavior primarily intended to make our minds feel well. We know physical hygiene and follow its principles with considerable accuracy to produce physical well-being, but in behavior involving mental participation we show woeful ignorance or lack of self-control in following the dictates of knowledge. We may be exceedingly discriminate in the foods we eat, and yet be peculiarly indiscriminate in the thoughts and ideas we attempt to digest.

People differ widely in their ability to digest mental pabulum. Those who have learned to direct their thinking can take any data and assign them to their proper place, usually with a minimum of emotional accompaniment; others permit themselves to be emotionally foundered by facts which those in better control can take calmly. Some can maintain control when experiential data are presented in small amounts and slowly enough to allow for assimilation, but they lose control when experience seems overwhelming. They resemble those people who exercise normal control before a relatively simple table spread with a few wholesome viands but who indiscriminately gormandize at the free lunch counter or lavishly spread banquet. Those who can stand before life's banquet table spread with knowledge and experience of every value and quality, and can choose with good taste and wisdom those experiential data which can be integrated into a wholesome personality, will be able to solve the most urgent problems of behavior hygiene.

The Processes of Behavior Hygiene

Any process which favors adequate adjustment and the development of a well-integrated personality has a place in effective behavior hygiene. Some of the important ones to be discussed are diversified activities in wholesome moderation, facing reality, humor, happiness, and the recognition of the rôle of time. There are others, but these will suffice to show the type of behavior which can be regarded as healthful and the methods by which it may be attained.

Moderation and diversification are twin watchwords of behavior hygiene. Many activities rather than extreme overemphasis of a few constitute the normal life. Acceptable activities indulged in within the normal range constitute a major part of hygienic behavior, because they tend to produce and maintain a state of health and well-being in the individual.

Instead of worrying about being abnormal in some undesirable way, why not spend that energy on striving for moderation? If some behavior pattern bothers you, why not analyze it to see wherein you are immoderate? For instance, if you cannot concentrate for effective work, examine the activities which are keeping you from concentrating and see wherein they are taking an undue amount of your time or effort. Then marshal or develop habits of control and correct the inadequate procedure. You probably will not *want* to do this, particularly if you are enjoying the attention your misery engenders; but if you are sincere in your desire to make the adjustment, you can refocus your effort toward more wholesome behavior. It is surprising how quickly you can make an assumed interest become real and absorbing by attending to the new activity and learning more about it. Lack of interest in worth-while things is often caused by lack of knowledge.

Facing reality is another exceedingly important aid in maintaining mental health. Our adjustments are much more healthy if they are made to the situation as it actually exists. If we can face reality intelligently, we are less apt to be overemotional toward the elements in the situation and to attempt inadequate and unhealthy adjustments. To be sure, we easily become emotional the moment self-esteem is threatened; but if we use our intellects effectively in learning to control our emotionality for moderation, our self-esteem is an asset rather than a liability.

Facing reality does not mean seeing only the sordid and ugly, it means seeing also the good and beautiful. Reality has both a bright side and a shadow, therefore we are not facing reality when we persistently search for the disagreeable or evil. This must be remembered when we consider the value of facing reality, or being objective, as a cardinal principle of mental health.

Often when we face a situation and glimpse only the one small part of it which seems to threaten our self-regard, that small part is held so close to our mental eye that we can see nothing else. The remedy is to push the incident far enough away to get a perspective which will permit us to see it in its proper relation to the many other coexisting facts. When we can do that we are facing reality and then can adjust with as much wisdom as we can marshal. Those who permit new knowledge and experience to unbalance behavior are making too much of close-ups. To adjust wisely we must push close-ups back into the surrounding scene and give them the proper perspective.

The next time you feel perfectly miserable over some failure or some slight, try pushing the incident back into proper focus among other accompanying factors and discover for yourself that reality looked at squarely and unafraid may, after all, have a kindly face. You may be sure that for the person healthily in control of his behavior, facing reality is not necessarily a solemn and lugubrious business. A blithe spirit does not obscure reality, it makes it tolerable.

Humor and laughter stand out as processes of behavior which have a great part in making life easier and more enjoyable. As this is being written, the world is shaking itself free from the sense of personal loss experienced when sudden death came to its beloved humorist, Will Rogers. No solemn, gloomy personality could have stirred the affections of all peoples as did his kindly, cheerful one with its propensity for ready wit and unpretentious, homespun humor. Whatever else he may have contributed to the world, we should ever be particularly grateful to Will Rogers for demonstrating so effectively the value of sterling humor in the maintenance of health and mental perspective.

A quiet chuckle or a hearty laugh can clear the tenseness of emotionalized situations. Fears slink away harmlessly in the candid light of humor. Tragedy's sharp edge can often be turned with a smile. Anger loses face in the presence of humorous calm and cheerfulness. These are truisms rooted deep in psychological aspects of hygienic behavior, which the discouraged and heavy of heart might well study and apply. The adolescent is particularly prone to tragedize situations which would be bearable and even pleasant if they could be leavened from within by a pinch of wholesome humor. The therapeutic value of a whole-souled and hearty laugh is well known. Even the person at whose expense the laugh is raised can enjoy the release of tension that comes with laughter, if his self-esteem has not been severely wounded.

Wise students of psychology will soon learn the value of giving more time to the cultivation of the right kind of humor as a factor in behavior hygiene. Instead of being merely incidental or ignored, it might well be a central problem in the investigation of means for the acquisition and maintainance of a sound mind. Two quotations from Bennett (1935) suggest all too briefly the place humor may have in building your life:

> *Be tolerant and objective about self.* . . . Laugh at yourself a bit and then forget yourself a good deal of the time. Your mind will take care of a lot of things if you give it the right suggestions. Do not perpetu-

> ally keep digging up the seeds you have sown to see if they are growing. Leave them alone for some of the time, after you have planted them firmly in the soil of good intentions and attitudes, and give them the encouragement of the sunshine and fresh air of an understanding, joyous, outward-reaching spirit (p. 144).
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> *Learn to recognize evidences of unhealthy reactions in yourself and to deal with them effectively.* . . . One important characteristic for successful work of this sort with self, as well as for general mental health in all life activities, is a sense of humor which can be directed toward self as well as toward others. The ability to laugh at yourself sometimes instead of taking yourself too seriously is one of the best preventives of mental ill health. If the humor directed toward either self or others is free from ridicule or malice, it is a very positive aid to a fairly consistent cheerfulness and sense of happiness in living (p. 158).

Laughter, closely associated with humor and well-being, has been the subject of many studies. Kimmins (1928) concurs with other investigators that relaxation of strain is the universal element in laughter. The conditions favorable to laughter, which he discusses, are stated in abbreviated form in the following summary of the important elements that make things laughable:

> 1. Novelty, out-of-the-wayness, oddity.
> 2. Physical deformities . . . additions are more laughable than reductions . . . a fat man is funnier than a lean one.
> 3. Moral deformities and vices . . . amusement varies with the moral standard of the onlooker, the nation or the class to which he belongs.
> 4. Breaks of order and rule . . . the soldier out of step.
> 5. Small misfortunes . . . loss of a hat, seasickness.
> 6. Indecency or obscenity . . . the coarse-minded person revels in this "muddy spring of laughter" unveiling what is usually hidden. The coarse joke must have an element of humor or it will not be tolerated.
> 7. Pretense or make believe . . . unmasking the imposter.
> 8. Want of knowledge or skill . . . skating, bicycling, ignorance or incompetency unmasked in self-assertive people.
> 9. Riddles, verbal play and amusing witticisms, bulls, puns, inversions.

The many important functions performed by laughter as summarized from Kimmins are:

> (1) Laughter has great social influence in castigating vices and follies and thus lowering their vitality; (2) promotes feelings of comradeship and produces an atmosphere of good temper in difficult positions; (3) performs a conservative function by ridiculing extremes in social behavior; (4) is a powerful weapon in attacking physical and mental

> eccentricities and reducing them to the natural order; (5) extravagances in dress corrected by laughter—a great leveler; (6) one test of the stability of a social order is, "Can it withstand laughter?"; (7) a sense of humor is a great solace in times of stress and strain.

Laughter rightly understood and used provides each of us with a natural means of more easily and effectively making adjustments to the stress and strain of living. Uncontrolled or wrongly used, however, laughter may interfere with this wholesome intent. Giggling, which Kimmins characterizes as a "most exasperating form of the degradation of laughter," has its maximum development in early adolescent years. If it persists beyond the age when it can be excused or tolerated on the ground of immaturity or ignorance, it may indicate mental defect or hysterical tendencies.

Even though schools and colleges offer no courses in the psychology of good humor, each of us can treat himself to such a course which can be all the more pleasant and effective from being self-directed. The lives and writings of the world's humorists furnish ample texts, but the material of greatest value will be found by the astute student in the experiences of himself and others. The master of kindly good humor will neither need to worry about people liking him, nor, conversely, about loving his fellow men. Laughter and good humor are contagious and bring their benefits to all who participate.

Dorsey (1935) sums up his discussion of the value of good cheer and laughter in mental hygiene with the following paragraph:

> We are well advised then to keep hold of good humor. We are well advised that the lilt of a laugh rings far. Many a tense schoolroom situation has been relieved by the teacher's sense of humor. Many a home is held together far more by good cheer than parents appreciate. The individual's own body integration is furthered greatly by frequent resorts to good humor reactions. Laughter is one of the few violent motor responses which have not been taken away from civilized man. It is a mild convulsive reaction which is helpful in modifying body tone and thus renewing man for life's fray (p. 419).

Happiness as a feeling of essential well-being is the expected result of adequate adjustment to the demands of living. People may differ little or much in their capacity for happiness, but they will differ much more in how they use this capacity. Investigations have revealed that happiness or unhappiness is an individual matter dependent upon the manner and effectiveness with which each person accomplishes the adjustments to life situations.

There is no universal formula for happiness applicable to all alike; there are only individual formulae devised by each person for himself. But those who live in a similar social milieu can recognize certain factors which tend to encourage happiness, just as certain other factors militate against it.

Happiness is most often developed, if not practically guaranteed, by well-established habits of self-control which encourage moderation rather than excess, by diverse and wide interests rather than few and restricted ones, and by the ability to face reality with clear vision and kindly good humor. Unhappiness is encouraged by lack of self-control, by ignorance of one's own abilities and limitations, by too personal and selfish attitudes and interests, by habits of pessimism and ill temper, and by twisting and obscuring reality to suit personally skewed behavior.

Jealousy and envy, which may have been regarded as excusable defense mechanisms in childhood when the individual was striving to establish selfhood, become powerful opponents of happiness in adolescence and adulthood. Burnham (1932) has the following to say of jealousy as an emotional survival:

> The characteristics of jealousy as a survival in adolescence and adult life have been portrayed by ten thousand writers; its injury to the mental health is a commonplace among psychiatrists; and its influence in the family, in social groups, and in shaping the course of history, is now recognized. . . .
>
> Jones concludes a study of jealousy in substance as follows: "Jealousy is usually pathological and it indicates a deficiency in capacity to love, lack of self-confidence, a survival feeling of guilt. It is a sign of weakness and not strength of affection, and has its origin in fear and unconscious guilt" (p. 372).

Every unhappy person blames everything and everybody except himself for his unhappiness. The happy person is usually too well adjusted to his world to bother about blaming anything. Therefore, if you find yourself beginning to hunt for something to blame, bring up your reasoning reserves and direct your energies toward reconstruction rather than allowing yourself to drift into unhappiness.

The tendency to blame is closely allied with excessive sensitivity and timidity which seem to be rooted in the fear of being blamed. Burnham (1932) has discussed both the blaming habit and the fear of being blamed as pernicious to mental health. Blaming, like jealousy, is a survival from childish attempts to adjust, and like other childish habits, fails when retained in maturity and becomes a fertile source of maladjustment and unhappiness.

Burnham's list of "don'ts" as rules for the sensitive are recast here into more positive suggestions. You may find them useful in formulating a better set of your own. 1. When you are hit in a sore place and feel hurt, remember that, like political news, the report is likely to be greatly exaggerated. Treat the incident objectively, not emotionally. 2. Dismiss the matter from your mind as unworthy of thinking over or being dwelt upon, because you have no adequate data to keep your imagination from making unwarranted inferences. 3. Excuse rather than blame the person who hurt you, since you yourself have probably hurt others in like manner. 4. Examine the fear of being blamed, which is one reason for your hypersensitivity. Treat this fear objectively and if possible, humorously, and it will lose its power to make you timid. 5. Admit that your own feelings may be no gauge of reality, therefore must not be taken too seriously.

Just as some people are oversensitive to a minor pain, some allow a minor unhappiness to overshadow their behavior. Judgment and a recognition of relative values and importance should be developed in both cases. We all expect to adjust to a certain amount of pain and use it wisely as a guide. It is quite as essential to mental health to adjust to a certain amount of unhappiness and also to use it wisely as a guide whenever possible. Occasional unhappiness or sadness is needed to avoid the cloying effect of too much happiness. It should be treated as any other painful experience.

The time dimension is frequently disregarded or forgotten as an element in the solution of many problems including those which cause unhappiness. Bennett (1934) in comparing things which older students consider essential to happiness with those which younger students so regard, noted that often things thought essential by the younger students were not so regarded by the older ones. The earlier we can solve our problems the easier many of our adjustments will be. The high mark which seems so essential to our happiness today becomes just another mark tomorrow; the "only girl in the world" may be just one of the crowd next year; the disappointments of today fade and become the memories of tomorrow or are forgotten. The therapeutic value of time as a factor in maintaining a sound mind will not be ignored by the individual who truly wishes to develop a desirable perspective on life.

ADJUSTMENT

Since adjustment is the central problem of living, it becomes the central problem of behavior hygiene. As the infinite number of adjustments are made, each individual develops characteristic patterns which his adjustments tend to follow, particularly in the more complex situations. These characteristic patterns are manifested so commonly that they can be identified as distinct patterns of behavior and readily observed in another individual. The individual using these stereotyped adjustment patterns feels them so comfortably a part of himself that he usually does not identify them for what they are.

Stereotyped adjustment mechanisms. The individual may ignore factual data and make stereotyped adjustments which have the effect of making him feel in control of the situation, of giving a sense of security, of feeling comfortable with himself or his associates. To be effective for these purposes such adjustments must become habitual, because, if the individual's complacency is disturbed by having the inconsistencies of the adjustment brought to his notice, he must either continue the stereotype and risk disapproval or try a new adjustment. Rarely is the user of stereotyped adjustments pleased to have them brought to his attention for conscious scrutiny. Even if he refuses to believe he has such a habit of adjustment, he must make the adjustment of thinking you wrong in order to maintain his own complacency.

Day-dreams present an easy method of circumventing disagreeable situations by permitting escape into the more pleasing and comfortable world of make-believe, in which thinking is usually unconsciously controlled to imagine the situation desired. Day-dreams are not of themselves adjustments; they merely postpone the necessity for adjustment. The realm of day-dreams may be made serviceable to the individual only if used as a resting place in which to plan adequate adjustment. If too frequently used, they merely produce inertia and inadequacy.

Identification with some person who seems to embody the qualities and abilities we wish to possess is another method of arriving at a pleasant self-esteem. Hero worshiping is effective and desirable in development only when it produces in the worshiper a better technique of adjustment in his own activities. It is pernicious when it lulls the individual into remaining a worshiper and never using the admired qualities of his hero as a springboard for his own progress. The type of hero worshiped is a potent factor in the subsequent influence of such worship on the behavior of the individual. The gangster as hero can hardly be looked upon as a socially acceptable model for desirable adjustments. This illustrates how our stereotyped activities may be detrimental rather than constructive or merely innocuous.

Projection is another favorite stereotype by which the individual may postpone adjustment or make one more pleasing to the self by shifting blame to sources other than personal inadequacies. The examination questions were not clear, or too difficult, or not on the part of the book studied, suggest a type of projection common to students.

Introjection is the stereotyped pattern of the person who bolsters up his sense of personal importance by taking to himself all possible blame. This person is almost as obnoxious as the chronic projector who persists in shifting blame to others. The over-fussy housewife, who imagines that the world wobbles on its axis if a grain of dust remains under the vase on the mantel, is as apt an example, as is also the overconscientious student who knows he will fail if he does not read every word of an assignment, and thereby bring disgrace upon his family, his class, his school, and his country.

"*Sour grapes*" is the common mechanism used by some persons when they cannot have what they want. If they can convince themselves that the object or situation desired is of little value or is defective, it becomes a simpler matter to adjust to existence without it. The fox called the grapes sour that hung on a branch too high for him. The subject we cannot comprehend is pronounced dull or unimportant. The party at which we cannot control conditions to produce for us a "good time" is a stupid affair. Sour-graping may be regarded as an adequate substitute for effective adjustment, but the chronic sour-graper will soon find himself regarded as a nuisance.

Rationalization is a great favorite among the defense mechanisms employed in adjustment. The similarity to the terms "rational" and "reasoning" is not accidental; this method has taken upon itself the superficial aspects of both in order to appear like them. By this kind of self-deception or self-justification, the individual can maintain an impression that he is controlling the situation and thus continue to feel he has retained the social recognition he desires. By means of rationalization the individual makes unreason seem rational. He knows the conclusion he wishes to reach and have others reach, therefore he selects such arguments and incidents as will insure that conclusion. Thus, although his method has a form similar to that of reasoning, it is vastly different. Reasoning proceeds from a consideration of all available facts to a conclusion based on those facts, regardless of the pleasantness or acceptability of that conclusion. Rationalization proceeds from selected data that seem plausible, to a previously formulated conclusion acceptable to the individual. For example, extravagance is excused on the ground of generosity to friends, or miserliness on the basis of thrift.

Rationalization may take many forms. Some stereotyped adjustment mechanisms are based on false reasoning, and therefore may be regarded as specific forms of rationalization named for their unique features. Rationalization develops from the need for the approval of our kind or from some other native want. We must believe these wants satisfied even though we deceive ourselves to assure that belief. We all rationalize to some extent to give ourselves courage, self-assurance, or comfort, but the adjustment we thus achieve is only temporary and inadequate. Not based on reality and factual data, it easily becomes a pernicious defense mechanism inimical to wholesome and effective behavior.

Others recognize our rationalizing much more readily than we ourselves do; therefore those of us who wish to establish a satisfactory behavior hygiene will not depend habitually upon such mechanisms. It may have its place in behavior hygiene when understood and controlled for a legitimate temporary use as buffer between self and an intolerable situation; but rationalizing has little value in more permanent and wholesome adjustments, which are the real objectives in behavior hygiene. It may be a temporary panacea but it is never a cure.

The development and prevention of these mechanisms are becoming increasingly the province and concern of child psychology. Many an adult can find the source of his difficulty in childhood habit patterns, but this does not absolve the intelligent adult from his responsibility to cease relying upon these faulty behavior patterns as a way of life. Various forms of untrustworthiness militate against likeableness. If we have retained a habit of lying because a few of our cronies may think us clever and smart, we must not therefore hoodwink ourselves with the belief that the habitual liar is the type of person that groups or organizations care to have as a member. The chronic cribber may like to believe himself clever, but business is prone to plumb the depth of his shallowness and reject him when later he bids for its favors. Business brothers are not apt to support an unreliable man for the good of the business, even though fraternity brothers may have done so for the supposed good of the order.

As children we may have learned habits of dependence, of which cribbing is merely one manifestation, but if we have experienced adequate psychological weaning, we retain only such of them as seem compatible with adulthood. Although all habits of dependence cannot be discarded, they either can be transformed into attitudes of confidence or feelings of security; or may be transferred to some omnipotent power or God, a force in the orderly course of nature, or some scientific truth. College is a place where we must, perhaps for the first time, transpose many habits of dependence into those of independence. No wonder many of us find going to college a difficult transition.

We like to think that the majority of college students have learned to control their behavior well enough to get along without serious difficulties; or, if difficulties arise, that they are able to think their way through them without undue emotional upsets. Whether or not this is true, it is to such well-adjusted individuals that we must look for outstanding examples of sane and effective living not only in college but beyond its walls. Even the best adjusted, however, can profit by knowledge of the difficulties and maladjustments of their fellows. They are frequently in a position to aid a classmate to improve his pattern of behavior far better than a faculty member could possibly help.

It is the part of wisdom to seek assistance when one's own efforts seem to fail. Just as we consult a physician when we feel physically ill, so should we as readily confer with a competent and well-adjusted person when behavior problems disturb us. We are too much inclined to consider our difficulties unique and peculiar to us. A well-informed, understanding person can help us realize that others have had the same problems and can tell us how they solved them. A competent person can also help us extract the significant parts from the experience of others and will not confuse us with a plethora of irrelevant material. The best help we can secure is that which aids us to discover what is the best line of procedure for us. Just telling us what to do may help us over the temporary situation, but it may not be the least help in a similar future situation unless we understand our problem and make the effective procedure our own through habituation or integration.

Therefore it behooves us not only to seek help readily for our adjustment problems, but to seek competent help which will aid us to adjust wisely. If there is a mental hygiene department on your campus, some member of its staff will be able to direct you wisely in the solution of your problem. Go to this department as readily when necessary as you would go to the health department. Your mental health and well-being are as legitimate a concern as your physical health. If there is no special mental hygiene center, perhaps a member of the faculty has trained himself to be a competent adviser in behavior hygiene. The point is to confer with someone who knows, preferably someone who has the normal point of view foremost. Some who attempt to advise are so steeped in the abnormal and maladjusted phases of behavior that their direction is worse than none. Other students may be able to help you clarify your thinking, but avoid the sophisticated student who knows all the answers. For you they may be all wrong.

Behavior Hygiene Problems

Adjustment problems in college are of many varieties, but some of them can be grouped conveniently for discussion. Behavior hygiene consists in working out a satisfactory system of dealing with the adjustment difficulties causing these problems. Investigators have found that many of the behavior problems college students need to solve are concerned with changes in environment, homesickness, competition, self-direction, forced growth, sex, worry, fear, and so on. These are of course not peculiar to college students, but are the problems anyone may need to solve in adjusting to any environment. In this chapter these problems are discussed primarily in relation to the student in the college environment.

Change in environment is a source of difficulty for many students. Living conditions are different, particularly if the student lives in a large dormitory. He must learn to adapt himself to a vastly more complex and perhaps more regimented system than he experienced at home. He may need to learn to resist invasion of his privacy as well as to learn to respect that of others. He will need to budget his time and not permit others to monopolize it simply because they are near by. He will need to readjust some of his own habits of behavior in accordance with those of others, yet not permit his own personality to be submerged.

Homesickness is a crisis arising from environmental changes. The longing for the familiar and loved is natural and should be adjusted in normal fashion. If allowed to get out of control, it may become pathological and abnormal and interfere seriously with adjustment.

The very eagerness of a college to adjust its new students may cause those charged with this duty to heap such a great mass of information upon them that only the most vigorous and least in need of adjustment can stand the forced "orientation." Although as a freshman you may have been effectively "oriented," you readily can recall moments when you felt that you must return home to reassure yourself that home was still there. Just knowing that everything was going on serenely in its accustomed routine in spite of your personal feeling of confusion was sufficient to give you that feeling of security needed to carry on. Reassured you could return and more actively investigate the possibilities of the new conditions, which became less overwhelming when examined less emotionally.

The student who has acquired habits of responsibility and independence, of self-control in emotional as well as other activities, will make this adjustment from home to college much more readily than one who has remained too dependent and has not matured emotionally to a point of control compatible with his age. The student suffering an acute attack of homesickness or nostalgia could do a great deal for himself if he would, but usually he is so absorbed in his feelings that he cannot make the adjustment to more wholesome behavior. Such a person needs to have more effective psychological weaning from home and loved ones, and be helped to make his emotional attachments to them those of the independent adult rather than those of the dependent child. At the same time his attitude toward the college environment must be changed to make him feel a part of it so that his self-regard is not threatened. Participation in campus activities, a few new friendships, a jolly party now and then, help a great deal toward curing the homesick student.

The **competition** the student meets in the new environment is also an important problem each must solve. If he has developed a well-integrated personality he will examine critically the objectives for which he is competing and will neither be overawed by them nor go into an emotional depression because he cannot win top place in all of them. College furnishes many opportunities for the student to learn the extent of his capacities and abilities, therefore it can help the student set a sane level of ambition. The emphasis on success is excellent, provided the things striven for are within reason, and are not given an unwarranted emotional halo. It is easy to give an artificial and exaggerated value to marks, athletics, fraternities, sororities, dates, and campus popularity. Perhaps a little sour-graping would be a wholesome procedure for the student inclined to go about pinning halos on every possible campus activity.

Competition is an excellent stimulus to activity which keeps one alert and interested in the business of living. Those who have experienced resistance and have learned to enjoy pitting their strength against an adversary will not flounder when confronted by the greater competition in college. We must try our strength in order to develop it. We must have a resisting medium in which to develop, just as the bird must have resisting air in which to fly.

Self-direction becomes an acute problem for those college students who have not learned to make decisions and act independently. Those who have been trained in self-reliance and responsibility can adjust more easily to the greater freedom of college, and can use their apparently abundant leisure to advantage because they have learned to use time properly. Learning to live the twenty-four hours in the day intelligently with a comfortable proportion of happiness or satisfaction is quite as important a goal for the college student as the acquisition of the degree itself. Some colleges require a student to swim across the tank with certain skill before granting a diploma, but they let him flounder through his twenty-four hour day as best he can. The student who would scorn using a lifebelt to cross the pool may be quite satisfied with his habits of depending upon others to determine how he shall spend his time.

Forced growth engendered by copious information may present difficulties. Adjusting from a narrow religious home or community to a suddenly broadened one may be both confusing and painful. Where a gradual change would bring little disturbance, a sudden one may produce emotional disturbances detrimental to mental health, since it is the emotionalized mental "growing pains" which most often cause unhygienic behavior. Emotional disturbances may interfere with the mental digestion of facts quite as much as they sometimes disturb physical digestion of food. Attitudes and beliefs may be disturbed by too rapid and copious ingestion of knowledge since it is difficult for him to absorb and integrate knowledge which seems to run counter to previously formed standards. The difficulties often arise because the student discards his old beliefs and attitudes before he has fashioned effective new ones from the newly acquired information. Doubt frequently is produced by such situations arising from forced growth. This is discussed more fully in Chapter XXVI.

If knowledge distresses you, you may be looking at it too emotionally, or out of perspective. Often a primary aim in going to college is definitely to gain knowledge, therefore each student should have or acquire enough poise and maturity to assimilate that knowledge and integrate a considerable part of it into healthy mental growth.

Problems involving sex exist on the campus as well as elsewhere and must be solved by the individual in whatever circumstances he finds himself. The student who has developed a certain proficiency in self-direction and can apply the principles governing hygienic behavior is less prone to lose control either in college or off the campus where circumstances bring sex to the fore. Some students have the poise and maturity necessary to coördinate the sex urge with other urges in a rational way and to solve the problem of delaying marriage until college is completed with a minimum of emotional disturbance. They have learned to direct energy into non-sexual forms of activity. Methods for sex adjustments, as for any other, must be determined by the individual and his peculiar environment. The most successful methods will take into account the general principles of acquiring authentic information, developing a diversity of interests, facing reality with good humor and a recognition of the time aspect in adjustment, which are important factors in behavior hygiene. College students do not differ from other people in the methods they employ to circumvent their conflicts and yet maintain self-regard. A glance at some of these subterfuges may help us understand ourselves or our fellows better.

Among **undesirable ways of meeting conflicts** is that of illness. Homesickness is a frequent form displayed in every college by students who fail to meet the new demands by becoming ill enough to be allowed to go home. The cure lies in gradually weaning the person away from home attachments and substituting other desirable ones. Acquiring independence and self-control does not mean lessening love and affection for home and homefolk, as so many seem to fear; it means putting this love on a broader, higher, and less selfish level.

The "**nervous breakdown**" is also a fairly common escape from responsibility through illness. It is not necessarily acquired with deliberate intent; the patient is usually more clever at hoodwinking himself than others. The student is not uncommon who brings to his difficulties the attitude, "Of course, I can have a nervous breakdown, if that's the only way out." It is not the only way out, but it will shift the responsibility to others with the least disturbance to his self-regard. Illness is a socially acceptable and tremendously effective attention-getting mechanism. When habits of using illness to command attention and escape from undesirable situations have been formed in childhood and are retained in college, these pseudo-illnesses often appear very genuine. It is this apparent genuineness which makes it possible for the malingerer to trade on the sympathies of his fellows, since most people would rather be kind to a few undeserving persons than run the risk of being unkind to one who is seriously ill. The inadequately integrated personality is peculiarly prone to the wrong behavior patterns which often produce or contribute toward the "nervous breakdown."

Undesirable behavior patterns are sometimes quite advanced by the time the student reaches college, where the added stimulations and responsibilities produce effects in such unstable individuals out of all proportion to the cause. College and hard study are then blamed for difficulties which often began early in life. The student who "breaks down" from study is given notoriety and sympathy but little real understanding, and almost no effort is made to ferret out causes for the failure. The student himself often wishes this to be so, since he prefers the sympathy and coddling to the responsibility which knowledge might bring.

Worry is a form of neurosis rooted in fear which can reach serious consequences if allowed to run riot. Constant worrying shows a lack of control which, according to Brooks (1929), may easily run into "morbid doubts and impulsions, feelings of insufficiency, nervous tension, and anxiety" (p. 487). These are extreme forms of worry which the intelligent college student should be able to control or avoid entirely. Chronic worriers usually let worrying become an habitual way of behaving toward past, present, and future situations, with serene disregard of the importance or authenticity of the things worried about or feared. The following paragraphs by Kirkpatrick (1934) are presented here because they suggest ways and means for the control as well as the understanding of worry.

> Usually worry about actual situations to come may be decreased or dissipated by (1) preparing for them in a way which will almost insure success in meeting them, and by (2) assuring one's self that the worst possible results, if they come, *can be endured.* After that the attention should be turned to picturing desirable outcomes to be hoped for instead of the undesirable ones that can be endured if the worst happens. The essential element is to recognize the realities and prepare to meet them in the best possible way known to self, and to accept the results whatever they may be. Sometimes much practice in meeting situations successfully is necessary before a habitual type of worry can be made to disappear: for example, fear of failure when speaking in public. It is much easier to avoid becoming afraid if one is interestedly occupied while waiting for the "zero hour."
>
> The sources of insecurity must be discovered and corrected before it is any use to say, "Don't worry" or "Stop worrying." The individual cannot, or sometimes does not want to stop.
>
> Not infrequently, when there is actual or possible danger to a loved one, the person feeling the uncertainty also feels the responsibility of averting it. He must do something to convince himself and others that he is concerned, and he does this by worrying. He is determined to worry and may even regard it as a duty to do so. To be comfortable while a loved one may be in danger seems to show absence of love, and so one must worry. Others perhaps worry as an easy substitute for the effort of finding and using the necessary means of relief. The worrier often must be induced to take an objective view of himself, revealing the fact that he is not facing realities, or even the more probable of possible futures. It will help if things can be done in preparation for various contingencies instead of just picturing terrible possibilities (pp. 359–360).

Fear is the emotion which most often appears in the problems dealt with in behavior hygiene. Books have been written regarding the conquest of this persistent reaction to elements in life situations which we cannot, or believe we cannot, control. Fear has a protective function to perform in keeping us from dangers, but it becomes a relentless taskmaster when we permit it to become habitual and to dominate our behavior patterns. Eliminate or master the fear-inspiring element and excessive or unwarranted worry, sensitiveness, timidity, guilt, inferiority, and other unwholesome activities are made innocuous or they disappear. Fear prolonged beyond its stage of temporary usefulness is dangerous, because it spreads so readily to other objects and engenders habitual fear reactions detrimental to healthful behavior.

Morgan (1934) has summed up practical suggestions as to how to overcome fear which are given here in abbreviated form as suggestions for formulating your own methods of dealing with fears.

> 1. *Do not be afraid of fear.* . . . It has the same value in the mental world as pain has in the physical world.
> 2. *Use fear as a preparation to fight.* The period of inactivity which the fear imposes should be used as a preparation to fight. . . .
> 3. *Develop an insatiable curiosity about any fear-provoking situation.* . . . It takes your attention from your own feelings and thus diminishes the fear and at the same time enables you to deal more effectively with the object which caused the fear.
> 4. *Do not fight your fears. Fight the things which make you afraid.* . . . Fighting fear is a subterfuge usually adopted to avoid the harder task of fighting the thing which makes you afraid, but such a subterfuge is a prelude to inevitable defeat.
> 5. *Penetrate the real cause of disguised fears.* A disguised fear can usually be recognized as such by the fact that it appears to be silly, does not fit in with the situation which is its supposed cause, and does not yield to methods of adjustment which succeed with a straightforward fear. . . . You must get at the real cause to enable you to adjust with adequacy.
> 6. *Do not let fear become a habit.* If you find yourself becoming timorous whenever a certain situation presents itself, substitute some other reaction for the feared one . . . (pp. 90–92).

To desire the admiration and approval of our fellows is a laudable ambition, but the neurotic individual carries these desires to great lengths and confuses sympathy and compelled attention with the more desirable forms. The psychotic person carries his escape methods to even greater lengths with complete loss of control and becomes insane. He becomes a subject for institutional care and his world becomes one of his own making with all responsibility shifted to other shoulders. It is no more necessary to know all the forms of the various neuroses and psychoses in order to lay an adequate and desirable foundation of mental health than it is to know all the diseases in order to maintain physical health. The laws fundamental to both are really few and simple.

Bennett (1934) gives an inventory to help you estimate to what extent you are applying the principles of wholesome living. Every fifth question is given here to show the type of inquiry.

1. Are you willing to face unpleasant conditions or difficult problems squarely and try to improve or to solve them?
5. Do you feel that other people or circumstances have prevented you from accomplishing many things?
10. Do you feel jealous of other people?
15. Do you have enough interests so that the loss of an important one would not make you unbearably miserable?
20. Does your life seem monotonous and uninteresting?
25. Are you sincerely interested in the welfare and happiness of people other than yourself?
30. Do you enjoy hurting another person's feelings?
35. Can you face unhealthful trends in your personality and try to deal with them without emotional upset?

Questions 1, 15, 25, 35 and similar ones are answered "Usually," while those similar to 10, 20, and 30 are answered "Rarely" by people who follow the principles of behavior hygiene.

Behavior hygiene involves preparation for life, and should be the conscious concern of the student himself as well as of the college or university he attends. The years invested in college are precious ones wherein the young man or young woman should develop and mature emotionally as well as physically and mentally, not only that they themselves may be happy but that their influence upon others will be that expected from educated people. Groves and Blanchard (1930) emphasize the necessity for balanced development when they write:

> More is involved in the task of the emotionally maturing student than merely his own happiness. Intellectual achievement means power, but does not insure judgment, or, by itself, establish wholesome habits toward one's fellows. Unless the emotions are disciplined, intellectual power like any other may be turned toward unsocial ends, driven by

the force of abnormal cravings, the results of a childish character (p. 220).

Insight as well as knowledge should evolve from education. Without insight we resemble Mark Twain's much-quoted cat which sits on a hot stove and learns not to sit on all stoves, but does not learn the specific knowledge not to sit only on *hot* stoves.

The laws of mental sanitation are quite as clear and easily followed as for physical sanitation. We learn to avoid physical infection by keeping clean, using sanitary utensils, eating wholesome food, using disinfectants when necessary. We can as readily learn to avoid mental infection by keeping our minds clean and rejecting infected thoughts or disinfecting them with wholesome thinking. We assiduously exercise our bodies and let our minds atrophy or get stagnant. We know all the rules of wholesome diet to maintain physical fitness and yet reduce mental food to a dangerous minimum or gorge indiscriminately.

Behavior hygiene should help the individual to avoid such pitfalls by using knowledge in successful adaptation to living. Thus we return to the fundamental concept of behavior hygiene: self-control of innate energies for moderation and diversification, for orientation within the time dimension, and good-humored facing of reality.

Questions for Yourself:

1. Analyze three habits of thinking or acting which have helped you develop effective behavior hygiene.
2. Analyze a habit which is detrimental to healthy adjustment for yourself or someone you know well. Plan in considerable detail how this habit can be transformed or eliminated.
3. What problem in adjustment not discussed in this chapter have you solved? What methods did you use?
4. Cite five examples of behavior, either personal or observed, which illustrate the rôle of self-control in behavior hygiene.

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PART II

CONTROLLING THE BEHAVIOR OF OTHERS

CHAPTER XVII

CONTROLLING THE BEHAVIOR OF CHILDREN IN THE HOME

The study of children's behavior has been enriched during the last two decades by organized investigation of the behavior of so-called normal children. Departments of child study and child welfare are now established in many universities. Their primary purpose is to discover basic principles underlying child behavior and child adaptation. Research workers are engaged in the absorbing study of infants and children, under controlled conditions in the nursery schools, in the laboratory, and in the home. In this chapter we shall consider to a limited extent, first, the natural developmental behavior of the normal child; second, some psychological methods of child study; third, the effects of parental influences upon child behavior; fourth, parental and adult control of children's motor behavior; fifth, parental control of routine behavior with specific reference to changing undesirable motor habits; and sixth, the suggestions which psychology has to offer for the most favorable parent-child coöperation in developing those behavior patterns in children which facilitate and advance self-control and wholesome adjustment to living.

The inquiries in child psychology center about the infant, the pre-school child from two to six, and the adolescent, to such an extent that one feels the years from six to ten are almost forgotten years. For our consideration of a few of the known child-behavior patterns we have searched for those interpretations of children's behavior which are based on sound, scientific data obtained from representative behavior of typical children in life situations. Identification of children's reactions in various situations at successive ages naturally precedes (1) determination of the causes for such typical behavior, and (2) the manner in which parents may foster the most advantageous behavior in their children. Child psychology provides a rich store of suggestions for training children in the home, but it is retarded in appraising practical suggestions which parents and teachers provide so abundantly within their limited experiences.

Many studies are yet limited to selected groups of children and are not necessarily representative of children in general under variable conditions. Therefore a few precautions should be heeded when psychology offers to parents the means by which they can maintain certain desirable behavior patterns in children and can remedy certain undesirable behavior patterns. Parents must ever be alert in applying these suggestions to a particular child in a specific situation to allow for some modification of general findings in particular cases. There is art in the interpretation of general knowledge for specific situations. Another precaution is essential in the interpretation of any data assigned to a particular age such as two years six months, or designated as a specific score such as 76. These specific ages and scores are derived from studies of groups of children, therefore any one child's behavior may vary within a considerable margin above or below the group age or score and yet exhibit normal individual development in the particular aspect considered.

Natural Developmental Behavior

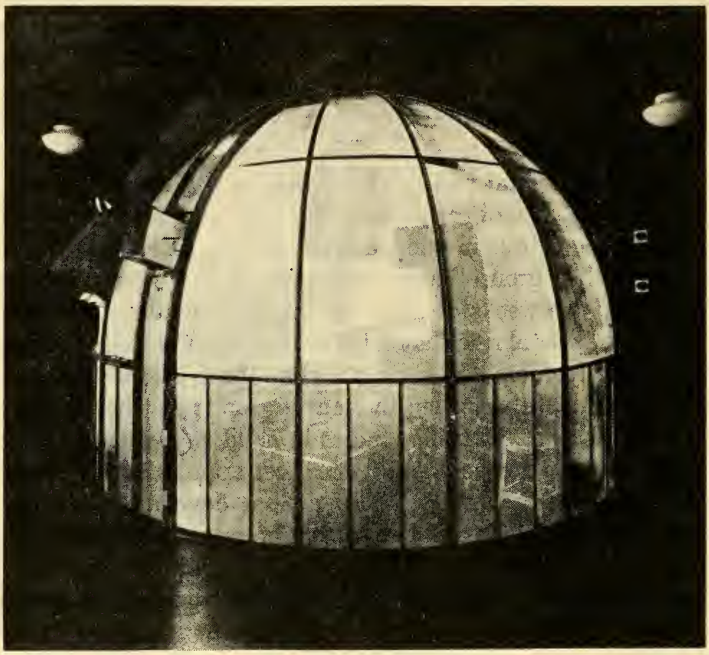
It is necessary to know the natural development of children's reactions and behavior before knowledge regarding control of their behavior in the home can be acquired. A definite trend in infant activities occurs in the ripening of neural processes and natural muscular maturation, which seems to be uninfluenced by exterior incentives. Infants tend to sit up, creep, and walk at certain ages irrespective of training. When necessary motor coördination essential for definite motor activity has developed, the child proceeds to behave in the expected manner in response to adequate stimuli. Anxious parents and overzealous relatives, who attempt to force motor development previous to the necessary neural and muscular maturation, are wasting useful energy and may harm the child. The child's control over any routine behavior, or learned behavior, such as manipulation of spoon in conveying food to the mouth, requires intricate coördination. This motor control is acquired with greater skill and less effort when the child is trained for this particular manipulation at the most advantageous stage of muscular maturation. When the child is ready for such training he usually displays freedom and strength in accomplishment and develops attitudes of acquiescence and coöperation. When he is not ready for such training he often displays tension and weakness which engender fear and negativism.

The value of maturity for acquiring skill is demonstrated by Gesell and Thompson's study of twins learning to climb stairs referred to in Chapter V. It is also demonstrated in a training experiment by Hilgard (1932). Children between two and three years of age were trained to cut with scissors, to put buttons through buttonholes, and climb a ladder during their playtime. One group of ten children was trained in buttoning for thirteen weeks. A control group of ten children was tested in this activity at the beginning and end of the period, and given practice only one week at the end of the period. This control group proved to be practically as skillful in one week of training given three months after the other group began training, as the other group was after the twelve weeks of training. In training a child, it is safe to apply the general rule that skills are more successfully developed with greater freedom and strength when the degree of maturation is well advanced, than when the maturation is just beginning.

It is the task of scientific studies in child psychology to determine the natural developmental age most appropriate for training certain activities. Furfey (1930) defines developmental age as "that constantly increasing maturity of general behavior which shows itself in the child's play preferences, his fantasy life, his ambitions, his adjustment to the group, his choices of books and movies, his ability to accept responsibility, and in general, in his whole behavior type." When an adequate guide for developmental behavior can be placed in the hands of every parent, child-parent relationships should thrive in an atmosphere of ease and coöperation rather than stagnate in one of resistance and compulsion. Children's interests offer clues to the direction training should take but they cannot be relied on entirely and should be used with caution as guides, since it is impossible for a child to know the skills most useful to him in the future.

PSYCHOLOGICAL METHODS OF CHILD STUDY

Various methods and techniques are used in the psychological study of children, some of which are (1) observation of children's activities and reactions, (2) the response to specific stimuli usually presented in test situations, (3) clinical case studies and behavior treatment, and (4) planned surveys of home and environmental conditions in relation to children's behavior. Brief references to the following studies will illustrate the use of these methods.



An
Atlas of
Infant Behavior

THE PHOTOGRAPHIC DOME

Normative Series

Yale Clinic of Child Development
© *Arnold Gesell, M.D., Director*

Yale University Press
Printed in U.S.A.

In this observatory the normative cinema records were made. From these records the delineative photographs of the Normative Series of this Atlas were selected. The interior of the dome is illuminated with diffused, soft light from Cooper-Hewitt combined with Mazda lamps. The surrounding laboratory is darkened. Two silenced cameras ride on the quadrants of the dome. The infant is examined in the crib located in the universal focal area. The dome is encased in a one-way-vision screen. Observers and operators stationed outside can readily look into the dome, but they themselves are entirely unseen by the infant.

Fig. 40. The observational dome in which infants are photographed and studied. From A. Gesell and others, 1935, Vol. I, p. 23.

Gesell and his coworkers in the Yale Clinic of Child Development combined motion picture studies with observation, the results of which are set forth in their most recent volumes, *The Atlas of Infant Behavior* (1935). Thirty-two hundred photographs from motion picture film visualize the behavior of infants during the first year of life. One series, the normative, shows the development of twenty-four behavior sequences of babies from four weeks of age periodically up to fifty-two weeks of age. These photographs of "normal" growth patterns were obtained from regular observations of babies in the observational dome of the clinic, Fig. 40. A second series, the naturalistic, includes behavior situations photographed in a special studio room which duplicated home conditions. In this series the cycle of early mental growth for the child over an age period from 4 weeks to 3 years is reproduced in Fig. 41.

The technique of response to a test situation is illustrated by Bühler's (1935) method of determining maturation of children of pre-school age. Only those activities are tested which are already established as characteristic expressions for a specific level of development. She describes the subtle psychological details utilized by this test procedure as follows:

> We give to each of the four infants, A, B, C, and D, ages 1 year to 1 year 3 months, two sticks that can be fitted into each other. We know from our studies of infants of this age that the characteristic response in the manipulation of objects is to bring two things in contact with each other. We expect then that the two sticks will be brought in contact by rubbing or hitting. The manipulation of two objects simultaneously is the characteristic moment in this performance and the bringing of the two objects together furnishes the basis for many complex patterns that are later acquired.
>
> Let us see how our four infants behave. A does nothing with the sticks, looks at them without touching them. He is passive. . . .
>
> Infant B takes both sticks, rubs and hits one against the other, *i.e.*, his behavior fulfils our expectations. He is normal.
>
> Infant C takes one stick, waves it and strikes other objects with it. This response is that of a child of six months and implies, therefore, a retardation of six months.
>
> Infant D takes both sticks and places them so that they form a continuous line. This response is somewhat advanced since it is preliminary to the next stage in which the sticks are fitted into each other (pp. 11, 12).

Examples of the technique used in clinical studies of children, especially illustrative cases for "problem" behavior are legion. Kawin (1934) studied children of pre-school age in regard to their socio-economic status, social adjustment, and mental ability. The clinical procedure included a statement of the problem, family background of the children, their developmental and health history, personality and behavior, the results of psychological tests, outstanding factors and general objectives, and the specific recommendations for each child which were formulated in a staff conference following the initial examination.

An
Atlas of
Infant Behavior

THE CYCLE OF EARLY
MENTAL GROWTH

Normative Series
Ages: 4 weeks–3 years
Child: G48

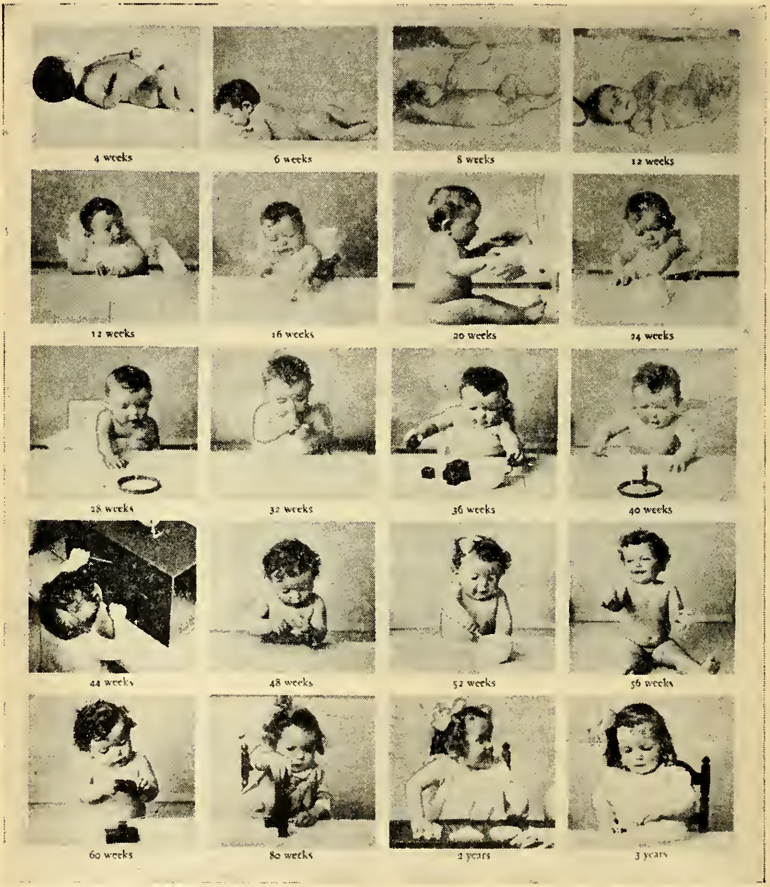


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FIG. 41. The cycle of early mental growth for the child, G 48, over an age period from 4 weeks to 3 years. From A. Gesell and others, 1935, Vol. I, p. 29.

The method used in a community survey is illustrated by the

Francis and Fillmore (1934) investigation. They studied the effects of the best and the worst socio-economic conditions upon 112 children in a city of 60,000 population. Data from home and school were obtained by means of interviews, case histories, mental tests, records, and rating scales.

Parental Influences on Child Behavior

Family influence, especially parental attitudes, affect the behavior of children to a marked degree. In the Francis and Fillmore study the main influence seemed to lie more within the family than in very good or very poor economic areas. Some favorable influences upon the child's personality and behavior were given as good health of the parents, hygienic home conditions, knowledge of the child's schoolmates, large amount of freedom for the child, the child's control of spending money, interest in the child's games at school, opportunity for the mingling of the sexes, and attention to the child's health. Parent-child relationships would be improved if parents earnestly observed and applied each of the above influencing factors.

Gilbreth (1928) offers many sound psychological suggestions from studying the development of her eleven children in the home. She writes that

> It is better, too, for children to enter the family life as sharing rather than as receiving members. They should not be allowed needlessly to change the entire method of living or feel that they are to be the center of interest and the real reason for the existence of the family. This is no kindness to them. All their lives long they will have to learn to adjust themselves to the needs of others; . . . The child must have the necessary sleep, food, quiet, and attention, but the less the family routine is disturbed by the program of the newcomer, the better . . . in making the children from the beginning a part of the adventure of living. Just as we plan for them from the beginning, so let them be an integral part of living from the very moment they begin to be. *Live with them, and not for them* (pp. 60, 66).

Children's behavior often is a reflection of parental behavior and parents can easily be psychologically blind to the behavior which reflects their own. Difficulties in children's behavior are now viewed more from the parents' attitudes than from the child's behavior. Two extremes of parental control have proved inadequate, one the "let alone policy" which may be due to willful parental neglect, or be unavoidable because of the parents' work outside the home, and the other overprotection and undue solicitude. A certain amount of direction and guidance is essential for the child and youth but it should decrease with age. All direction and control should be the coöperative relation between parent and child which leads to self-direction and self-guidance. Self-control in children cannot develop if parents are extremely severe and harsh, nor on the other hand, can it develop if parents are excessively fond of them or indulgent. Extremes in parental control destroy all opportunities for responsibility on the part of the child, retard moral and social development, and prevent the wholesome personality characterized by efficient, independent, and self-reliant behavior. Fortunate is the child whose parents guide and control his behavior in a moderate, even, fair, objective, sympathetic, and understanding manner. This implies giving him enough freedom to profit by his own mistakes and to face his own difficulties, yet directing him in a manner which induces in him the wish to follow the activity that will improve his adjustment to others and to the exigencies of living. Direction of the latter type embodies the highest principle of effective parental leadership.

With increasing age it is equally important for a mutual understanding to exist between parent and child. Adolescence is a particularly important period for the exercise of parental control in a genuinely understanding and helpful manner. Brooks (1929) points out that

> We must remember that the boy or girl on the threshold of adolescence has a faulty and inadequate understanding of many important features of life, and that he is forming this understanding at the very same time that he is forming significant personality habits. He needs experience in self-control and self-direction, but he also needs wise guidance so that he will come to *recognize*, *accept*, and *use* (through habits, attitudes, and ideals) the best rules of playing the game of life. Only in this way can parental or other control meet the needs of the adolescent (p. 600).

Motor Behavior and Its Control

Infancy is characterized by random activity. Soon, however, the exploratory activities of the first year begin to have a purpose and become useful. In Bühler's (1935) study infants were observed continuously through the twenty-four hours. She found that spontaneous movements increased 30 per cent within the first year and were more than two-thirds of the infant's responses while awake. New-born infants vary greatly in amount of activity; one infant may be 290 times as active as another. Goodenough and Anderson (1931) illustrate a method of measuring the amount of physical activity one child exhibits in a five-minute period, Fig. 42. This is an example of spontaneous activity in free play, not an indication of maximum activity. The distance traversed can be directly compared with that of other children.

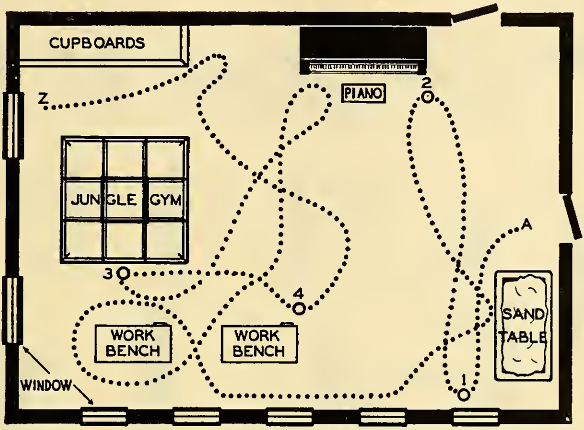

FIG. 42. A five-minute record of the activity of one child. Circles indicate pauses (15 sec. or more); A indicates beginning of record; Z indicates end of record. Pauses: 1, looking out of window, 20″; 2, talking to teacher; 3, climbing on jungle gym, 95″; 4, watching other children at work bench, 35″. Distance traversed 26 × 5 = 130 ft. Adapted from F. Goodenough and J. Anderson, 1931, p. 144.

Motor development during pre-school years is primarily one of increasing degrees of skill. Shirley (1931), whose observation of infants was referred to in Chapter III found that their postural and locomotor development progressed in a broad general pattern, the sequence being that postural control precedes any efforts at locomotion, and some form of locomotion precedes walking. This is shown in Fig. 43 on page 384. These infants were children from the professional classes for the most part and possibly were a little advanced beyond a general representative group of infants. About 60 to 70 per cent of all children learn to walk between 11 and 14 months. Investigators generally agree that the motor behavior patterns develop in an orderly manner beginning with the head, then extending through the trunk and pelvic regions, finally reaching the legs and arms. Within each state of motor development there are many intervening steps. Halverson (1931) studied the motor development of arm, hand, and fingers in motion pictures of infants' reactions to a cube placed in front of them, and found that the change in type of hand movement varies from a "primitive squeeze" of pulling the cube to the body or other hand at 20 weeks; to a "squeeze grasp"—between the fingers and palm—at 24 weeks; a "hand grasp" at 28 weeks; a "palm grasp" at 32 weeks; and a "forefinger grasp" at 52 weeks.

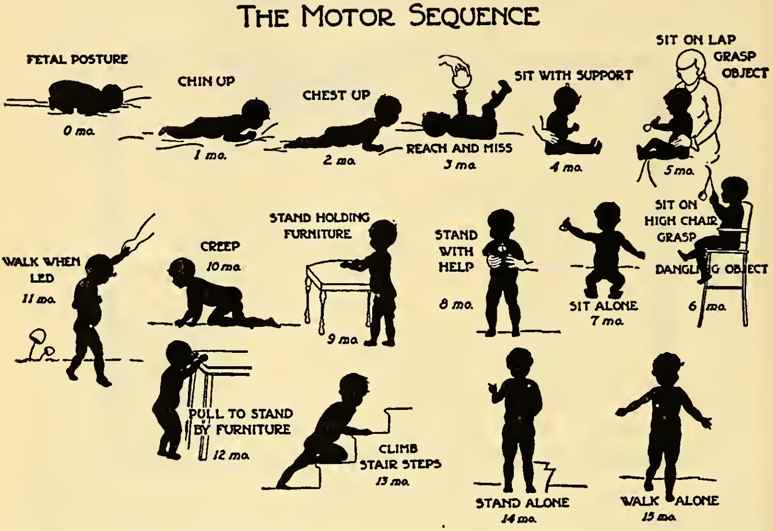

FIG. 43. The approximate ages at which stages in motor development occur in children. These stages represent the general order of development, not the exact time. From M. Shirley, 1933, frontispiece.

Deficiency in motor development often is due to muscular tensions which do not permit freedom of movement, or to lack of opportunity for the child to learn motor coördinations on his own initiative. Muscular tensions often occur from forced development, severe disciplining, nagging, and fatigue. Duffy (1932) explains that

> Children who habitually manifest a high degree of muscular tension are likely to have special problems which must be recognized and dealt with in a constructive fashion if they are to achieve their ultimate possibilities for poise and for generally well-coördinated behavior. Children of this type seem especially likely to be sensitive to stimulation of all kinds. This excess of sensitivity exposes them to certain dangers. It may lead to insufficiently controlled behavior of various sorts, including

stammering, enuresis, impulsive emotional outbursts, and general restlessness. It may, on the other hand, be accompanied by extreme inhibition, leading to withdrawal or lack of participation in various types of activity. In either event it increases the complexity of social adjustment.

Lack of opportunity for the child to learn many complex motor abilities, such as feeding himself, carrying a glass, climbing into an automobile, and so forth, is often the fault of hurried and impatient parents. If parents could realize the exhilaration expressed by a two-year-old in accomplishing a new ability on his own initiative they would check their misguided efforts to help the child at an age when he is "all set and ready to go." Paul at 25 months was left to play in the park on a green which was separated from his adult caretakers by a cement walk slightly curbed. Between the cement curb and the lawn was a small, wedge-shaped depression neatly cut in the soil. In order to reach the adults it was necessary for Paul to step from the green lawn over the narrow wedge-shaped depression and the narrow curb *down* slightly to the walk, a difficult balancing feat. In good nature, he coaxed for attention and help, and then made several attempts to step over when apparently unobserved though not quite trusting his balancing ability. Finally on making a happy landing he shouted and laughed delightedly. Then he made seven repetitions of the same act in the same direction with shouting and laughter after each success. Such joy in achievement often is denied many growing children. The observable effects of inadequate motor development do not seem to affect a child's satisfactory adjustment to others in the home and school to the extent that inadequate mental development may affect it, although motor progress and reactions are the chief indicators of mental development during the first two years. With increase in age and the use of language, motor activities become less important in personality growth and adaptation.

Handedness has become a subject of specific concern at the present time due to its supposed influence on speech disorders. Is it advisable to train and force a child to use his right hand when he naturally tends to be left-handed? The percentage of left-handed children is very small, the pure left-handed being estimated at 6.3 per cent. About two-thirds of the left-handed children are taught to write with their right hand. It has been a natural tendency for adults to direct an infant in the predominant use of his right hand. When the use of the left hand persists, however, parents are advised nowadays not to force a change. The fact that the change from left hand to right hand is made may not be as detrimental to finer motor coördinations involved in speech and elsewhere as the constant negation of "No, you must use this hand." Long-continued repeated thwarting of a child's naturally learned initial responses which persist and are not harmful usually results in serious tensions for the child. These tensions if not overtly expressed in speech defects such as stuttering may be involved in subtler nervous habits over which the child has lost control.

The control of play behavior is closely connected with the control of motor and mental development since both motor and mental development progress also through play. Spontaneous imaginative play is a natural beginning of creative expression. How freely and buoyantly creative play activities take place as soon as children begin to manipulate materials. How adroit a parent or adult must be to permit development of this creative expression in the child and not suppress it entirely by a routined day of specified tasks. Parents and teachers need to be alert to the psychological value of undirected playtime and refrain from interference in creative activities.

Imaginative play consists in a child using materials in a new combination that he has not seen or known before. The persistent tendency to construct is evident in the first efforts to take a toy apart and use the parts for something different. This is not willful destruction at first but it soon tends to be when nurse or adult impresses upon the child in an irritated voice that he has destroyed his toy. He may then purposely destroy things. Every child should have a place where he keeps pieces and parts—junk as it is often called—to do with as he wishes. To explore and investigate are wholesome signs of healthy behavior development. The attitude of adults toward this exploratory behavior can be changed so that exploratory activities resolve into constructive activities.

The change from manipulation of materials to constructive activity and dramatization occurs at about the age of 4 years. It is natural for children to go from actual construction to make-believe construction and from this into story-telling. The imaginative use of thoughts in telling unbelievable and impossible experiences to adults may be a child's efforts to be social. These experiences are real to him, and it takes tact and understanding for parents to direct this imaginative experience and not immediately tag it as a lie. In due time, of course, parents should control this play of phantasy by training the child to differentiate between imaginary experiences and real facts. The positive direction of imaginative behavior into its appropriate channels for later imaginative and creative expression is preferable to negative direction and destructive suppression. The child is not in control of his imaginative activities when he substitutes his phantasies for reality in trying to adjust himself to his environment. If, however, he is in control of his imaginative activities, they are potential forces for activating mental processes which lead to inventions and creative expression in various forms.

Jersild (1933) traces the development of play activities from its earliest stages of vocalizations and the use of limbs in grasping, shaking, dropping, and throwing objects, to the use of the doll carriage to push or pull before the age of two; the transporting of objects in a movable vehicle at about three years of age, and later its use in make-believe play; and the use of bottle-tops, coins, and materials in a game of "keeping store" from the ages of five to seven.

Toys are the material incentives toward manipulative and constructive activities. Woodworth (1934) suggests a psychological classification for many of the toys in terms of movable objects, plastic materials, noise-makers, vehicles, space-annihilators, things that defy gravity, and adult-imitating toys. If the length of time a child plays with given materials can indicate preferences, the three favorite play materials are building blocks, modeling, and painting equipment. Small mechanical toys are the least preferred. In one study the interest span or time of concentration on a single activity was found to be 2.5 minutes of uninterrupted play at the age of two years; 4.7 minutes at the age of three years; and 5.6 minutes at the age of four years. According to one investigator the longest span for a two-year-old was 30 minutes. Play activities unquestionably can contribute to a healthy behavior development if adults have a positive, constructive attitude toward children's play behavior.

Routine Behavior and Its Control

The fundamental principle underlying efficient control of routine behavior of infants and young children is consistency in the development of behavior patterns of sleeping, eating, elimination, dressing, and so forth. Feeding an infant, preparing him for sleep and for play, attending to his elimination and other needs, are much more complex and strenuous for the child than adults recognize. Fear, crying, and resistance will be reduced to a minimum if the child is fed at regular intervals, put to bed for sleep regularly, toileted according to some schedule, handled gently and considerately rather than quickly and abruptly. Training the child so that these daily habits of routine behavior consume the least energy should be one of the psychological concerns of parents from the time of the infant's birth.

Sleeping behavior occupies more time of an infant's day than any other function. The average amount of sleep (time asleep and not time in bed) taken each season according to a week's record of

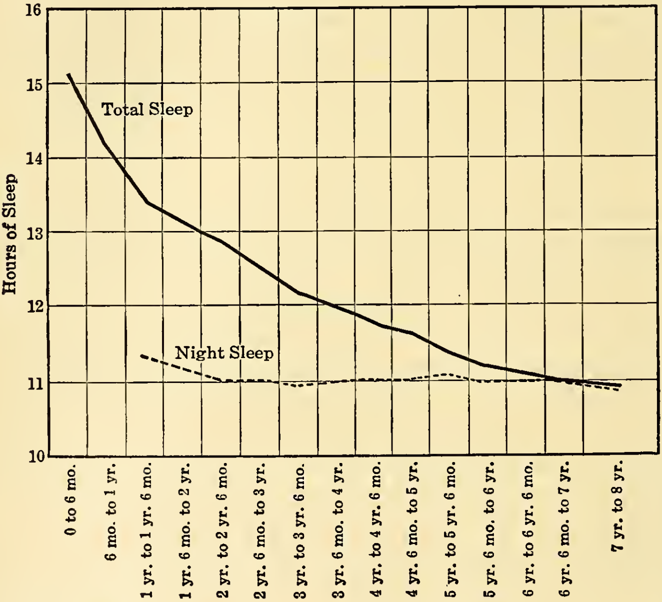

FIG. 44. The relation of sleep to age shown by the seriation curve. From F. Goodenough and J. Anderson, 1931, p. 110.

1,000 Minnesota children is shown by the seriation curve in Fig. 44. This curve represents changes which occur in a function during a continuous time period, either as a result of growth and development, or as a result of other factors such as practice in the case of a learning experiment. The decline in the total amount of sleep required from infancy to the age of seven and eight years is approximately five hours. Several investigators find that the minimum sleep period varies from 13 to 16 hours for the child's first two years; from 12 to 14 hours during his third and fourth years; 11 to 13 hours his fifth and sixth years; 10 to 11 hours from six to nine years; 9 to 10 hours from ten to seventeen years; and 8 to 9 hours from fifteen to nineteen years.

Reynolds and Mallay (1933) observed the sleep of 34 children, 17 to 62 months of age, for twenty-four hours a day during a period of six weeks. It took them an hour to go to sleep after they were in bed at night, and one-half hour to go to sleep in the daytime. Naps were taken on 98 per cent of the days by the two-year-old children, 55 per cent of the days by the three-year-olds; and 50 per cent of the days by the four-year-olds. There are wide individual differences in the amount of sleep needed by children. Their physiological needs are the most important factors and under favorable and wholesome living conditions most children will sleep as much as they need. It is not necessary to impose the average schedule of sleep on all children alike.

Difficulties in getting to sleep have been found most frequent around the age of three years. These often arise from habits requiring attention such as rocking, singing, patting, or story-telling. Fear of the dark and of being alone are easily aroused. One mother prevented this fear by having her three children, ages 8, 5, and 3, march upstairs at night to their unlighted bedrooms with hands on shoulders, to the step of a march she played on the piano. When they were all tucked in bed the mother went upstairs, turned on the hall light, and joined them in singing a good-night song. Their attention was completely absorbed in interesting activities. Sleeplessness and a negative attitude toward sleep can be due to several thoughtless parental acts and attitudes, such as punishing a child by putting him to bed at odd hours, forcing him to leave an exciting game, or abruptly taking him away from creative work or constructive play. The excitement or anxiety shown by a mother over her child's sleeplessness are conveyed to him at once and only increase his nervousness and tension. Wholesome sleeping habits are fundamental for adequate adjustment during waking hours.

Children should be hungry and their eating a natural process, yet how often difficulties arise. According to one study of 100 normal children feeding problems reach their peak for children at about three years of age, and fall off slowly after that age, but continue for more than one-fourth of the children up to six years of age. Habits of eating are being acquired each day a child is being fed. Keep a regular feeding schedule and be ready to train a child to feed himself as soon as his muscles are matured for the intricate balancing and directing requirements of such an act. Learning eating habits is easy when feeding conditions are kept simple and eating is not rushed. Bartlett (1932) tells us the child is ready within a year to take a spoon and try to feed himself, at two or two and one-half years he has gained enough control of his hands to eat his meals in 20 to 30 minutes, at three years of age he is perfectly capable of feeding himself. He advises parents not to be too anxious about table manners in this training period; place the child's tray on a table of appropriate height situated on a floor where food can be spilled if necessary. If there is no interest displayed in any of his tricks, they will soon be stopped.

Children's food preferences may be marked although some children tolerate all foods. In cases where certain foods are refused, the apparent dislike may be genuine or feigned because some member of the family refused similar foods. To overcome this dislike do not force the child to eat, but prepare the food in as attractive way as possible; serve a small portion of it early in the meal when the child is hungry, do not be disturbed whether he eats all of it or not; and consider his mealtime a matter of routine and a casual event. To prevent the frequent occurrence of minor feeding problems it is best to leave children alone at mealtimes and to avoid any emotional excitement. Refrain from exercising a dominating spirit of control by forcing the child to eat. Forced feeding may be very harmful.

Anorexia, refusal to eat, is a major behavior problem. This lack of hunger is probably the result of some psychological attitude and conditions attending eating time. To overcome it is not so much a matter of training the child as reëducation of the parent or nurse's attitude toward conditions which developed this behavior problem. The refusal-to-eat habit is expressed frequently from the ages of two to five years. To cope with this problem at first, remove all food after a reasonable length of time, have the child leave the table, and let him wait for food until the next meal. Should the habit be continued, look for organic causes, know the child's physical condition, seek counsel in tracing the formation of the habit in his training. In extreme cases medical and nutritional treatment may be necessary. Refusal to eat is often corrected as soon as the child receives no attention from such behavior. Jersild (1933) gives the illustration of a two-year-old child who persistently refused to eat at home and was suffering partial starvation. There was no organic cause, and medical prescription brought no improvement. The child was put under the care of a teacher in a nursery school and removed from the frantic coaxing, forcing, fretting, wheedling, and anxiety in the home. Within a few days under the care of the teacher the child was eating normally. Further training by the same teacher occurred in the child's home and finally he ate at home without the teacher present. The trouble arose from feeding conditions in the home environment.

Training the child to control elimination as soon as his development permits such training is a natural and expected function of parental control. Here again behavior problems are so frequent that parents find themselves inadequate to train the child for his own comfort and relief from tension and embarrassment. A child's own rhythm of activity is a guide to the parent. After the first month observe the regular intervals at which the child voids, capitalize on the regularity of excretions after feeding. By the second month an infant's training for regular bowel movements can begin by holding the infant in one's arms and placing him over a warmed receptacle held in one's lap. Some parents manage children so that they neither soil or wet themselves after the third or fourth month. The habit of feeling dry is a big step in the process of control over elimination. By the eighth or ninth month an infant is ready to use a chamber chair.

Bladder control is established later than bowel control. At the end of the first year training for bladder control should start, but the child is usually eighteen months or two years old before he can control the bladder long enough to let his needs be known and reach the necessary receptacle. Much of the training for bladder control consists in the associations of conditions accompanying the act of eliminating. An illustration of associative conditioning is the experience of parents who took their two-year-old daughter on an auto trip. Her particular equipment for elimination had not been taken along because she occasionally had used the adult toilet at home. However, the first day of the trip passed for her with no voiding; the parents were not unduly concerned until at the hotel her crying at bedtime indicated distress. Hours passed and all efforts to relieve her were of no avail. Finally the father placed her upon a tall brass spittoon, and the child tried to smile through her tears, as she said, "There," and was relieved. Conditioning to the adult toilet served when other environmental conditions were the same but utterly failed in the presence of new stimulating conditions. Learning to control elimination proceeds readily if conditions are kept uniform, if the child has become habituated to being dry, and if distractions and excitement are avoided at the time. If a child reaches the age of three and a half or four years without day control of the bladder, it becomes a problem.

Enuresis, or lack of bladder control beyond the usual age of incontinence, is often caused by faulty and poor training, but may be due to physical causes. Some children never learn how to be dry. To become excited, to scold or shame the child, to attach any emotional concern with the first realization that the child has not acquired adequate control, merely fixes the habit. This lack of control may be closely related to a feeling of insecurity and the need for attention. Severe cases of enuresis accompany personality behavior problems and are deeply involved. Parents have helped the child to gain control by working with him in an understanding and sympathetic manner, using a chart on which he places a gold star for every dry night. This arouses his own responsibility and he is made to feel that it is his problem. If the child shows other behavior problems as well, such as temper tantrums or refusal to eat, the enuresis may disappear when one or more of the accompanying problems are treated successfully. When enuresis is used to gain attention, to secure companionship, or to obtain some desire—just as threats to vomit, acts of holding breath, fits of kicking or screaming, have been serviceable in obtaining desires—then it is necessary to check the effectiveness of this behavior. If the child can be trained to obtain these same desires in some other way, the behavior will cease.

Other routine habits such as dressing and habits of cleanliness are also facilitated by regularity in their occurrence and by imitation of the adult's actions. Simplification of fastenings on children's clothes and the gradual approach toward self-help hasten learning.

Within a few months a child anticipates the dressing process by moving legs and arms appropriately. Putting on his clothes with the exception of lacing shoes is readily done after the age of two. The dawdling which occurs at this time and is so trying for mothers can be partially avoided by training the child to assist in dressing himself long before he is put to the task of putting on all his clothes. In a similar manner a graded approach can be made in training him to bathe himself. Habits of cleanliness are early acquired, such as washing hands before meals and after toileting, brushing teeth morning and night, keeping nails clean, eating without spilling, and using a handkerchief for coughing or sneezing as well as for needs of his nose.

Changing Undesirable Motor Habits

Undesirable motor habits are characterized by nervous tendencies to maintain motor activity which dissipates energies and shuts the self off from adjustment demands, either immediate or remote, of environmental stimuli. Some motor habits will be briefly considered in this chapter, such as thumb-sucking, temper tantrums, nail-biting, stuttering, masturbation, and other nervous habits.

Olson (1929) attempted to measure the nervous habits of normal pre-school and second- and third-grade children. Habit spasms or tics were defined as irrational, involuntary small motions. The first observations were given in a condensed inventory of nervous habits in the following categories: oral (sucking thumb, sucking fingers, biting nails, protruding tongue); nasal (picking nose, scratching nose, wrinkling nose); manual (picking fingers, writhing hands, clenching fists); hirsutal (pulling and twisting hair, scratching head); aural (pulling ear, picking ear); irritational (scratching body); ocular (rubbing eyes, blinking eyelids, winking); genital (manipulating genitalia, thigh rubbing); and facial (grimacing, twitching muscles). According to the frequency of occurrence the oral and nasal nervous habits far exceeded others in the list. These varied habits periodically become a problem in the behavior of many children; basically they spring from a nervous, tense child nature; their manner of expression may be accidental or imitative of parent's weaknesses. They are often traced to the desire to gain attention.

"Breaking a habit" is common nomenclature. Its psychological connotation is misleading. Habitual behavior is rooted deeply and has developed over a long period of time. To think of breaking that habit as you would break a dish is inconceivable. Diverting or completely changing any overt behavior which is a manifestation of nervous tension requires a carefully planned-out campaign. Adults need to be patient and not frighten the child in helping him to change a so-called bad habit. As soon as the child is old enough, his confidential coöperation is necessary. Morgan (1934) suggests the following principles:

> 1. A habit can be broken only by substituting a new reaction pattern for the old one. . . . If a child holds his spoon in the wrong manner, try, in a positive way, to teach him to hold it in the right manner, instead of calling attention to the incorrectness of his grasp.
> 2. The new habit must bring more satisfaction to the child than the old one.
> 3. If the habit is but a part of a social situation, the social pattern must be considered. . . . If, for example, the child acts in the undesirable manner only when his mother is present, it is obvious that the habit is a social reaction to the mother (pp. 131, 132).

The general principles for treatment of chronic habits will apply equally well to any or all of the undesirable motor habits specifically discussed in the following sections.

Thumb-sucking begins with infants a few months old. It is a natural continuation of the sucking movements in feeding which brought relaxation and pleasure. This desire for comfort, and the satisfying means of getting it, are certainly not undesirable in the infant. Just when it begins to be a "bad" habit is not cited in the literature. Morgan (1934) believes that the fear of the parent is the prominent cause of thumb-sucking becoming a chronic habit. The parent is determined never to permit the child to suck his thumb. The first stage of the habit formation is pulling the thumb out again and again; the second stage, applying tape, vile substances, smacking hands, which are merely irritants and they accentuate the desire; the third stage, irritability spreads, the child sleeps poorly, fusses over food, cries, shows evidences of "temper." He suggests that the solution of the problem is (1) to see that the child is properly nourished; correction of the diet may be necessary if the thumb is sucked intensively; and (2) to teach him to relax after meals; if he sucks his thumb at first to relax, later substitute a favorite doll. The change in the parent's attitude is the greatest need.

Temper tantrums at their worst consist in violent kicking and screaming. Such behavior is characteristic of emotional tension and often occurs in the personality manifestations of children who also exhibit other nervous habits. It is one form of getting attention. This exhausting motor activity reaches its maximum frequency at about the age of two years. It often occurs as a reaction to repeated thwarting of some desire. The most advisable treatment is to pay no attention to it. Do not permit such behavior to be effective so that the child gets what he wants. If possible everyone should step out of the room where this childish performance occurs, close the door, and remove themselves from easy hearing distance. A child never does this alone as it loses its significance when there is no audience.

Nail-biting is thought to be one of the several pernicious effects of mistakes in discipline of the child from the ages of two to six and early adolescence. Thom (1928) believes that "nail-biting is more apt to be found as part of the picture in the neurotic child than is thumb-sucking. Many thumb-suckers are calm, placid, unemotional children, while the nail-biters are apt to be hyperactive, quick, fidgety, energetic individuals with whom everything seems to register on the nervous system in an exaggerated manner" (p. 113). Wechsler (1931) reports that the occurrence of the habit rises until the child is six years of age, where it remains more or less constant to about the age of twelve for girls and fourteen for boys. Its cause is often attributed to nagging and irritable parental supervision. Morgan (1934) suggests that the nail-biting child be observed by nurse or parents when the child is unaware of the observation. Make note of every restraint or negation the child experiences. "The treatment for such a child is to make him feel comfortable and free from criticism. Teach him to relax and you will find that the habit will disappear of itself. Call his attention to the habit and you will merely accentuate his self-consciousness and fix the habit more firmly" (p. 136). One practical way in which parents have coöperated with the school-age child in checking the habit has been to provide the child with a manicure set so that all rough places about the nails, which cause picking and biting, are kept smooth. Time, or even money, spent on weekly manicures saves hours of nagging and irritation and brings about more satisfactory results.

Stuttering is a nervous motor habit in which the rhythm of verbal communication with others is not under control. Since speech is our chief avenue of communicating with others, any hindrance in the natural flow of verbal expression due to nervous tension is embarrassing, humiliating, and annoying. Several investigators have found that about 1 per cent of school children have this nervous habit. In one study of 3,175 children in the public school population, 11.5 per cent had speech defects in some form and about 1 per cent were stutterers. Travis (1931) reports that 85 per cent of the stutterers begin before the age of eight years; boys outnumber girls anywhere from two to one to ten to one, with the ratio increasing with age. Blanton (1929) found in 400 individuals ranging in age from one and one-half years to thirteen years that stuttering began in the majority of cases at the age of two and one-half years with another peak at the age of six years. He believes that stuttering "is a symptom that expresses a lack of adjustment to the group . . . and is caused by fear, partly conscious and partly subconscious, of meeting the group."

Among several hundred stutterers brought to the University of Iowa Speech Clinic, about 43 per cent of them were originally left-handed. Travis believes that one of the environmental factors which is of high significance in the causes of stuttering is the changing of children from left- to right-handedness. Other investigators hold that primary contributing causes are injury to the nervous system, disease, a feeling of social inferiority, emotional attitudes and conflicts. For some individuals the source of stuttering results from imitation which also is the source of many nervous habits.

Correction of stuttering is successfully accomplished by specialists in habit-clinics, by psychologists, and others using various methods. The correction requires close coöperation of everyone affecting the child's environment—parents, nurses, teachers, relatives, and child playmates. The improvement of health and the correction of personality and behavior disorders aid in the elimination of stuttering. The successful correction of adult stuttering is clearly and effectively explained by Alexander (1932). Stuttering is corrected only when the individual himself has finally gained control over the nervous habit.

Sex problems should be approached in a frank and coöperative manner. Parental attitude toward these problems should be calm and undramatic. The consequences from punishment which arouse feelings of shame and guilt may be more serious than the effects of unhealthy practices themselves. Bartlett's (1932) suggestions for helping children to change bad habits, especially those who are old enough to understand explanations, are given in his book. Dr. Miles' chapter in the *Handbook of Social Psychology*, to which reference has been made in Chapter XV, is also helpful.

Foster and Anderson (1930) list the behavior problems of 100 children, ages two to six; a representative group of usual and ordinary children none of whom had had their behavior discussed with a physician or welfare worker. Of these various problems temper-tantrums occurred for 15.3 per cent of the cases; nervous habits were found in 28.8 per cent of the cases; sleeping problems occurred for 14.4 per cent; handling the genitals occurred for 5.1 per cent; feeding problems arose for 30.5 per cent; speech problems for 17.8 per cent. The average number of problems for each child was 2.9. The homes of these children were given a rating of good, fair and poor on the basis of the home situation being desirable for children. In a follow-up after four years new problems had arisen in 13 per cent of the familes with good homes, and 80 per cent in the poor homes. The problems of the young child were found to reflect the family situation in which he lives.

Punishment of children by adults assumes various forms from a mild reprimand to severe corporal punishment. It is a temporary expedient too often used by adults to vent their own anger, which shows their lack of control, rather than to protect the child from some harm. A caustic reprimand to a sensitive child or severe spanking of any child easily produces an emotional pattern of fear that may have serious consequences. The more intent a parent may be on breaking a child's will and on asserting his authority, the sooner he will estrange the child and train him to be cruel and intolerant. The effect of punishment in fixing the behavior pattern for which the punishment is administered renders it more harmful to the child than helpful. Guthrie (1935) writes that

> Since punishment gets its effect at the time through stimulating crying and struggling and thereby breaking up the unwanted habit, it is clear that any other means of breaking up the action pattern may be just as effective. Any interference that captures attention and introduces a new activity will be successful. Picking up a small child and tossing him or swinging him by the heels is just as effective in overcoming a balky fit as is a sound spanking, and, of course, has a great advantage in that it does not leave the parent a cue for frightened aversion. The distraction must be so thorough that the muscle set of the obnoxious behavior which is the cause of its persistence is thoroughly changed (pp. 140, 141).

Controlling the Development of Emotional Patterns

Children's emotional behavior naturally falls into two descriptive classes: one the resistant antagonistic, negativistic behavior; the other friendly, coöperative, positivistic behavior. The child is in a condition of tension, dependence, and fear or in a condition of relaxation, independence, and self-reliance according to the behavior displayed. Parental influences and family relationships are potent forces in determining which type of emotional pattern will emerge. Resistant, fearful behavior is not conducive to adjustment; friendly, coöperative behavior is adjustment in the making. Child psychology leads us to believe that happiness in children springs from a wholesome personality, one that is healthy both physically and mentally. The roots of such personalities are intricately interwoven during childhood by a system of parental control and direction in which children not only are taken care of adequately but also left to help themselves; in which they are loved sincerely but not fondled excessively; and in which they can feel sure of help and understanding with respect to their problems and difficulties but for the most part are permitted to solve them themselves and stand on their own feet.

Definite patterns of pleasure, anger, and fear have been observed during the first few months by many investigators. Bridges (1933) studied the emotional behavior of 62 infants at a hospital for several months. She found that at three months the infants showed definite patterns of pleasure response by smiles and rhythmic movements, also reliable forms of anger responses. If the child was healthy, the pleasure patterns predominated by the age of three or four months. By the age of six or seven months the child coos, laughs, babbles, explores, and shows definite social behavior. At about fourteen months real temper tantrums appeared in which the whole organism was involved as the child "screams, holds his breath, trembles, turns red, kicks or thrusts his feet out together." Patterns of joy and affection are observable during pre-school age. Control of these emotional patterns can be wisely exercised if parents know when they usually develop and the circumstances which favor or check their development.

Sudden loss of support and loud sounds usually cause fear. Valentine (1930) points out that the fear first appearing at the age of two years may or may not be due to external overt behavior;

fear of the dark occurred at the age of twenty-five months. Hagman (1932) tells us that for 70 selected pre-school children the most feared objects in order were dogs, doctors, storms, deep water, and darkness. Jersild and others (1933) in personal interviews with 400 children from five to twelve years of age regarding their fears, dreams, wishes, and so forth used this inquiry as one of several: "Tell me about things that scare you, things that frighten you. Tell me what makes you afraid." In the analysis of responses 21.1 per cent of all the fears first named were fears of the occult, of the supernatural, of mystery, skeletons, corpses, and death; 17.8 per cent were fears of animals; 14.1 per cent were fears of strange happenings and places, of being alone or being in the dark; 8.8 per cent of nightmares and apparitions; and 7.3 per cent of bad people including kidnapers, robbers, and so on. The investigators observed an apparent irrational character in children's fears. Jersild and Holmes (1936) write that "The most effective techniques in overcoming fears are those that *help the child to become more competent and skillful and that encourage him to undertake active dealings with the thing that he fears*" (p. 102).

Many fears are the result of adult reactions in the presence of the child. To hear a scream, or see a flight, or sense the meaning of fear remarks are sufficient motives for similar fear reactions in the child. Children are burdened with many unnecessary fears. The best way to control fear is to prevent the first experience of fear in a child's new explorations. It is more difficult to lessen the fear reaction after it is once established. It is probably advisable to have children accompany members of the family to the doctor's and dentist's offices long before they themselves need to visit these offices for treatments. As soon as a child is interested in a storm, talk with him about the thunder and lightning in order to dispel any past or present fear. If a child is afraid of a policeman, have him with you some day when he can visit with a policeman in a friendly manner. Preparation of a child for any new experience or strange situation, especially when he is young, should engage the attention of the thoughtful, understanding parent. Fears which occur from imaginative experiences in stories, the motion pictures, and so on, are moderated and given right perspective when the child feels free to talk about them with some member of the family who can respect his confidences. Child behavior is essentially a reflection of home conditions and parental influences. For these reasons behavior clinics are increasing and child welfare departments are turning their attention to the reëducation and training of parents.

Obstinacy in children is apparently a normal behavior pattern. Goodenough (1931) in her studies of anger in young children observed the attacks of obstinacy of 45 children between one and two years of age in controlled family situations. These attacks occurred from once a week to four times a day. They reach their highest point during a child's second year, declining rapidly thereafter. Illness and hunger are two conditions which give rise to obstinacy. Bühler (1935) discriminates between normal obstinacy and neurotic obstinacy: the former is behavior in which the child is not unwilling but unable to comprehend and master a situation, the attacks are of sheer desperation and occur only occasionally, and they disappear after relatively short periods; the latter is determined unwillingness to give in, the attacks occur frequently, and they can exist potentially for several years. She traces the preliminary development of obstinate behavior in a child's response to prohibitions as follows: an adult forbids a child to touch a toy within the child's reach and then turns away or leaves the room a moment. All children one to two years of age understand the prohibition canceled at the moment contact with the adult is broken and they proceed to play with the toy. If the adult returns suddenly, 60 per cent of the children one year and four months old, and 100 per cent of those one year and six months old, show the greatest embarrassment, blush, and turn to the adult with a frightened expression; from the age of one year and nine months on, an attempt is made to return the toy quickly to its place; from the age of two years on an attempt is made to motivate the disobedience by claiming the toy as the child's own; after two years of age there is an expression of will, insistence on rights, and possessive impulses are shown.

The best check on obstinate behavior is to keep a child healthy, reduce tensions to a minimum, avoid threats, reversals of decisions, and unnecessary interferences with a child's activities. In order not to encourage illness, which often breeds obstinacy, treat a child better when he is well than when he is sick. Moderate illness can be easily feigned for the sake of attention, of tender care, and to avoid some disliked task.

Jealousy prevalent in many children often arises when materials, pleasures, and desires are lost due to the influence or

presence of others. Many first children need to be prepared for the shared affection and attention necessary when the second child arrives. Prolonged jealousy gives rise to many tensions and nervous motor habits. Morgan (1934) suggests that "the cure for jealousy is to prevent it before it grows to sizable proportions and this can best be done by giving the child widened interests, both personal and impersonal, preferably outside the home environment, so that he may build up his own self-esteem independently of the estimation of his parents or siblings" (p. 92).

Resistant behavior in one study was believed to be an innate behavior pattern. Among 983 children from six months to 54 months of age, complete resistance was found to begin in the six months' period, rise to a peak at 30 months, with a decline to the age of 54 months. The pattern of resistance varied from simple crying and clinging to vigorous bodily and verbal reactions. Healthy adjustment to others calls for the development of resistant behavior to a degree necessary for self-protection, attention-getting, feeling of self-assurance, and other benefits. Antagonistic attitudes toward parents are often traced to conditions of over-solicitousness and over-devotion due to the emotional hunger of a parent and the child's desire to be relieved of the exaggerated devotion, also to severe jealousies between parents toward one child.

Emotional dependence of the child is prolonged by over-solicitousness, too much devotion, and excessive help from parents. Some of its indications are illustrated by the two-year-old child who screams when its mother is about to leave the house; the adolescent who cannot go to camp alone; and the college girl or boy who "suffers" intensely when away from home. Jersild (1933) describes the degree of independence and self-reliance of nursery school children, two and three years of age, when they are brought to the new environment. Some sob and hover about the door through which the parent or nurse departed, some cling to garments of teachers—one extreme case of protest occurred when a child forced himself to vomit by thrusting his fingers down his throat (ten times one forenoon)—while others are unperturbed by the absence of their mothers and begin to explore the new environment. Emotional independence develops more readily when children have been gradually "weaned" from the constant protection of parents by visiting away from the family, occasionally to stay overnight or for a week's visit with relatives.

Friendly and coöperative behavior is indicative of easy social adjustment. It is an enemy of jealousies, fears, nervous habits, and tensions. It permits a give-and-take relationship and good sportsmanship in gains and losses of desires and individual wants. The most favorable home conditions prevail and the wisest parental control is exercised when well-adjusted children emerge from such homes and influences. The interests and affections of these children have extended beyond the home walls. Their feeling of freedom, self-assurance, and security stimulate original thinking and action. The creative urge finds expression and creative ability is developed in an atmosphere of mental and emotional stimulation. Independence, consideration of others, self-fulfillment are indicators of superior leadership in the home.

Controlling Social Behavior

Social behavior begins its development in the child's first contact with adults, later with children, followed by preferences for certain adults and children, eventually coöperating in play with other children. Stoddard and Wellman (1934) record the development of social behavior of infants according to the observations reported by two investigators:

Item	Approximate Age—Months
Smiling in response to adult's voice	2 to 3
Laughing at adult, answering look of approaching person with "lolling"	3
Observing another child, laughing at it	5
Beginning attempts to arouse the attention of adult. Arousing attention by "lolling," answering words of adult by holding out hands to adult	6
Beginning to welcome familiars, beginning to imitate them, and showing disapproval of the presence of strangers	7 to 12
Arousing attention of adult through movements such as pulling her dress	9
Holding out toy to another child, "lolling" at it	9
Exploring the environment independently	9 to 10
Defending himself against taking away toys	11
Imitating other children	10 to 12

Item	Approximate Age—Months
Arousing attention of other child through "lolling." Putting aside toys and turning to another child	11
Showing preferences among children	14
Mob behavior (disorderly, refractory, and quarrelsome behavior in the absence of accepted authority)	15 to 24

From various studies it has been found that sociable and coöperative play increase from two years of age on. Group play begins with one companion and later includes three or more companions. From a series of observations children of two years were found to play alone 30 per cent of the time. The fundamentals of social adjustment are not easily defined and little is known of the manner in which social behavior can be modified. Group activities and participation under competent and wise leadership such as occur in many of the camps for boys and girls effect many modifications in behavior through imitation and comradeship experiences.

Morgan (1934) suggests the minimum social adaptation a child must learn, portions of which are given here as follows. The negative aspect of social adjustment is not to hurt other children; to respect their property; and keep from active conflict with them in other ways. Higher in the social scale there is a passive type of adjustment, to be very docile; to keep alert to authorities, especially the teacher; and to conform literally to what is imposed upon him. Still higher is the type of adjustment of give and take in social coöperation, to be considerate of the rights of others, and in turn expect consideration from them; to hold the goal as the finest type of social adjustment; to realize that coöperation and teamwork break down when the other fellow does not know how to coöperate. "The ultimate of social adjustment is to understand the other person. . . . The man is a success who has, in some manner, learned to understand and deal with people." The child who does not mature beyond the self-centered age when all the attention is toward himself demands the same attitudes from those outside the home and thereby stores up many disappointments for himself. Not until he learns to like others and in turn is appreciated and enjoyed by them is he on his way to social maturity.

Difficulties in social adaptation take the form of various types of conduct such as lying, stealing, and deceit. Hartshorne and May (1928) conducted an extensive program with 11,000 children, from eight to sixteen years of age in which cheating, lying, and stealing were tested. Measurements were made, unknown to the child, by tests during his play, work, and athletic activities. Some findings were that deception tends to run in families and not in school classes; that the children of different religious denominations do not differ in their tendency to deceive, and that there is no relation between Sunday School attendance and deception; that younger children are less inclined to deceit than older; and that honesty, as measured by these researches, is positively related to intelligence and socio-economic background and not to sex or physical condition. According to the authors the most common motive for cheating was the "desire to do well."

Social development brings an interest in sex at an early age. Parental guidance in the gradual education of the child regarding any sex questions will guard against the dangers of false and exaggerated information gained from others, and will help formulate the right emotional attitude. If a parent shuns this responsibility by silencing the child or evading his questions, he commits one of the gravest errors in parental direction. These questions need to be answered as straightforwardly and naturally as any other inquiries. Frankness, actual use of words pertaining to reproduction such as "ova," "spermatozoa," "penis," "pregnancy," and so on provide the child with correct vocabulary that is the basis of sane thinking in further sex education that proceeds with age. During the fourth year or earlier, children inquire where they come from just as they ask where milk comes from or about any other matters associated with their growing experiences.

Many mothers and fathers nowadays are frankly discussing the type of answers which are most satisfying to the child, and will at the same time serve as a foundation for the most wholesome point of view in further steps in sex education. Schweinitz (1928) has related the story of how we become alive, are born and grow up, in meaningful language for children from six to eleven years of age. Girls should be prepared with adequate knowledge of menstruation before its initial occurrence, likewise boys should know about seminal emissions; both processes are normal and nothing to worry about. Both boys and girls should be informed regarding sexual hygiene early in their adolescence. Research on these problems of parental guidance makes little headway because of the secretive attitude toward the subject and the many taboos with which it is involved. Self-knowledge and self-control for the child are both essential for his adequate and wholesome adjustment to others.

Language behavior expresses more complex and discriminative adjustments in social development. A child's differentiation of verbal directions for social response occurs long before he can use the words himself to influence the behavior of others. It is suggested that uncoöperative and obstinate behavior in early childhood may be due in part to the child's limited use of words such as "yes" and "no." Verbal associations with certain movements and with specific objects are known by the child before his language ability develops to the stage of using the appropriate word when acting or seeing and hearing certain performances. Adult training of the child in verbal associations begins with the parents' own use of words, and much depends upon their own consistency in the choice of words which they wish the child to learn. Waring's (1927) list of rules for parents to use in furthering the child's control of his conduct through the use of language may prove helpful but space does not permit their inclusion here.

Language development in its early stages centers around adults. Children's efforts to use audible verbal symbols are probably motivated by desire for social contacts. Later on the innumerable questions and chatter of children may have much more of a social purpose than adults realize. Children actually comprehend an answer to a question only when it interests them. Adult answers are often meaningless because they are not couched in understanding terms for the child. During an afternoon drive through hilly country several airplanes were seen, and Paul, two years old, asked: "Where did the airplane go?" This inquiry, reiterated again and again with varying accents on the words "airplane" and "go," persisted for an hour. Innumerable answers were useless until the adult's response, "It has gone to bed" brought complete satisfaction to the child expressed by his "Oh." This answer was the first one which was meaningful because it came within his experience. Great effort was expended by the child, to say nothing of the adult's patience and training during the episode.

The young child often talks for the pleasure of talking, much of which is centered about himself. McCarthy (1930) found that this self-centered or egocentric speech took place more in the presence of nursery school children than in the presence of adults. "By *egocentric speech* Piaget means that in which the audience is disregarded. The child talks either for himself or for the pleasure of associating anyone who happens to be there with the activity of the moment. He speaks only about himself and makes no attempt to place himself at the point of view of his hearer." Socialized speech has a purpose of exchanging ideas, influencing the hearer, gaining information, and maintaining rapport with adults. It is used studiously in subtle attempts to adjust to many signs, cues, and emotionally toned commands or directions. Guthrie (1935) refers to the attack of hysterical mutism which occurred in an instance he cites as a lack of knowledge and consideration in parent-child relationships. A talkative three-year-old was at the dinner table with the family. The father came home from business tired and angry. In answer to her request for something he turned suddenly to her and shouted "Say Please!" The rest of the family joined in his demands. The child was excited and did not speak in the presence of the family for about eleven months. Parents' privilege of control should carry with it preparation for the effects of their own behavior on the child.

Social development progresses more rapidly and intelligently when a child is equipped with many words and is trained in their use. The child who speaks distinctly and adequately for his specific need or desire has a marked advantage over the child whose parents have "adored the baby talk" and made no effort to equip him with the use of language necessary for getting on in the world in a self-assured manner. Adequate language equipment establishes a child's independence and self-control. McCarthy (1930) found that children from upper socio-economic classes had better language development at the age of three years and above than those in lower family groups. Smith (1926) studied a group of 13 children, none of whom began to talk at the age of eight months; but in another group of 17 children she found that at the age of ten months they had an average vocabulary of one word according to the mother's reports. In studies of the vocabulary of pre-school children at different ages she found that records of the spontaneous use of words are not a true indication of children's vocabulary; therefore she used test items requiring the identification of objects or pictures and completion of sentences.

The average number of words used by children from two to six years of age is listed below as adapted by Stoddard and Wellman from Smith's study. The estimates made by Cuff (1930), who tested 1,100 individuals from third grade to the college level, are also given.

From M. E. Smith

Age Group Years-Months	Children	Words in Vocabulary
2–0	25	272
2–6	14	446
3–0	20	896
3–6	26	1,222
4–0	26	1,540
4–6	32	1,870
5–0	20	2,072
5–6	27	2,289
6–0	9	2,562

From N. B. Cuff

Grade	Cases	Vocabulary
3	117	7,425
4	120	10,395
5	117	12,460
6	104	13,965
7	99	14,910
8	96	16,800
9	88	19,110
10	46	20,930
11	51	21,245
12	45	21,840
College (1st Yr.)	227	22,295

Individual differences in the vocabulary of children of the same ages are very great. Vocabulary is considered the best single indication of intelligence. Language patterns in the form of sentences develop rapidly. Smith (1926) found that two-year-old children used complete sentences 37 per cent of the time; three-year-olds for 68 per cent of the time; at four years, 84 per cent of the sentences were complete; and at five years 87 per cent were complete. In Fisher's (1932) study of 12 pre-school children high above the average in intelligence, all of them were using complex sentences at 32 months of age and compound sentences when 34 months old. Words and their serviceable use by children not only further the intricate adjustment to people and ideas but are objective indicators of wholesome parental control.

Controlling the behavior of children in the home, when based upon sound psychological principles, does not consist of severe parental discipline and domination which suppress initiative and engender fear in the child; it consists of the parental direction and coöperation which encourage initiative and favor the child's self-control. To live with children in the home and not for them means mutual sharing of problems, power, and pleasure; friendly comradeships; and a home atmosphere which fosters well-adjusted personalities.

Questions for Yourself:

1. Cite examples of parental control which you have observed or experienced. What were their effects upon the children?
2. Are you aware of routine behavior problems in children you know? Are they being handled helpfully for the children?
3. What nervous habits have you known in children? How were they brought under control?
4. What has been your experience with emotional behavior, such as fear?

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CHAPTER XVIII

CONTROLLING THE BEHAVIOR OF CHILDREN AT SCHOOL

Children's behavior with teachers, supervisors and other children while in school buildings, and on school grounds, will be considered from three points of view: supervision of study, supervision of discipline, and supervision of play. Our school systems, both public and private, control the minds of youth, and are responsible for individual and group behavior of children during the greater portion of their plastic development. Certain stereotyped standards have been established by the hierarchy of authority which extends from the board of education through superintendent, principals, supervisors, to the teachers. These standards are apt to fulfill artificial adult conceptions of school attitudes rather than to reflect genuine child responses of social, coöperative, and active behavior of healthy youngsters. The psychological atmosphere of schoolrooms indicates the complex interrelationships among children and between children and teachers. Control prevails over study, discipline, and play. Is it the old type of traditional suppression and autocratic coercion, or is it the new type of supervision and coöperative leadership which fosters individual expression and creative activities?

The best progressive schools are those which are organized to meet the child's needs for the development of his total organism, to provide outlets for the creative use of energies, and to develop an atmosphere of self-confidence and security in all the social relationships of living, thereby creating a milieu in which children can function. Maladjusted, "warped," and suppressed personalities do not thrive in such progressive schools, because they try to provide the environment, school atmosphere, and teacher attitude which foster creative self-expression and self-control, and develop children with whom it is easier to live. In order for a school to continue a well-ordered family relationship or to modify a badly managed family life for a child, the closest coöperation of parents, siblings, and teachers is necessary. Scientific studies of child behavior in these interrelationships will eventually reveal the progressive steps in educational and social responses most conducive to normal adjustment and self-control.

Supervision of Study

Children differ in their intellectual equipment for learning and study. Controlling the behavior of either dull or superior children presents a different problem to the teacher than controlling the behavior of mentally average children. Such descriptive terms as "dull," "average," and "superior" are applied to children thus classified by means of mental tests. In our discussion of intelligence tests in Chapter XIV, we referred to the work of Alfred Binet in his studies of French children, but left the description of the tests developed by him and his friend Theodore Simon for further elaboration in this chapter.

The content of the Binet-Simon tests extends from the simplest responses of a three-year-old when asked to point to his nose, to the complex responses of a "superior adult" in defining abstract terms. In 1905 various bits of information, mental tasks, problems, and questions found to be known and performed by the French children in home, street, and school situations were organized into progressive forms of difficulty. After securing responses to them from children of all ages, those mental tasks which were accomplished by a certain proportion of children at one age level were placed in that specific age-level group as a test of mental development. In 1908 the Binet-Simon Scale of Intelligence was used in France for the classification of children. A later revision by Binet was made in 1911, and an American revision by Terman and his associates at Stanford University was released in 1916 for use in this country. Since that time the Stanford Revision and Extension of the Binet-Simon Scale has been widely used in the schools of America. At first teachers in the schools attempted to administer and interpret these tests, but it was soon realized by school administrators that specially trained psychologists were needed, not only to administer the tests, but to advise with teachers and parents about test results and children's progress in school. Today the large school systems have trained psychologists who go to various schools each day to test certain children about whom a school seeks advice.

The intelligence quotient or IQ. The manner in which the Binet-Simon tests should be given puts the child at ease and permits him to do his best. The psychologist who gives the tests has information about the child's age, his school progress, and so forth, before he enters the room where the tests are to be given. Only one child is tested at a time. If a child is ten years of age and has not been doing well in school, the examiner may begin with the tests for an eight-year-old child. If there are six tests for an age level and a child performs them correctly, he is credited with a total of twelve months of mental age, two months for each test correctly performed. If the child does all six tests for the eight-year level correctly, he then tries all the tests for the nine-year level, and so on, until he fails all tests for any one age level. If he can do only three tests in the nine-year-level group, he is credited with six months of mental age; if two tests in the ten-year level group, he is credited with four months; if one test in the next level of eleven years and no responses in the twelve-year level, he is credited with two months on the eleven-year level. In order to determine the mental age of this child according to the standards of these tests, add the six-months' credit for all the tasks done in the nine-year level, the four-months' credit in the ten-year level, the two-months' credit in the eleven-year level, and the total is twelve months of credit beyond the eight-year level. This gives him a mental age equivalent to a child nine years of age, but his chronological age was ten. In order to express his mental maturity the mental age of nine years is divided by his chronological age of ten years which gives a quotient of .90. Suppose this child of ten years had been slightly advanced mentally for his age and could do the tasks which credited him with a mental age of eleven, then his mental age of eleven divided by his chronological age of ten gives him a quotient of 1.10. The quotients, whatever amount they may be, are referred to as the intelligence quotient, or IQ. The decimal point is not used, therefore we refer to an IQ of 90 or an IQ of 110. The significance of various quotients in terms of behavior is discussed elsewhere in this chapter.

The progressive difficulty in mental tasks assigned to each age level can be noted by the following samples which are the fourth and sixth tasks for each age level.

Year III (6 tests, 2 months each)
  4. Gives sex, *i.e.*, boy or girl.
  6. Repeats a sentence containing 6 or 7 syllables, *e.g.*, "In summer the sun is hot."

Year IV (6 tests, 2 months each)
4. Copies a square with a pencil.
6. Repeats four digits, such as 4–7–3–9.

Year V (6 tests, 2 months each)
4. Defines, in terms of its use or a better definition, the words: chair; horse; fork; doll; pencil; table.
6 Three commissions executed in the proper order, such as, "Now, I want you to do something for me. Here's a key. I want you to put it on that chair over there; then I want you to shut (or open) that door, and then bring me the box which you see over there."

Year VI (6 tests, 2 months each)
4. Comprehension of two out of three inquiries.
   (a) "What's the thing to do if it is raining when you start to school?"
   (b) "What's the thing to do if you find that your house is on fire?"
   (c) "What's the thing to do if you are going some place and miss your train (car)?"
6. Repeats 16 to 18 syllables, *e.g.*, "We are having a fine time. We found a little mouse in the trap."

Year VII (6 tests, 2 months each)
4. Ties bowknot in one minute from a model shown.
6. Copies diamond with a pen.

Year VIII (6 tests, 2 months each)
4. Gives similarities, two things. Wood and coal; apple and peach; iron and silver; ship and automobile.
6. Vocabulary, meaning of 20 words out of 100.

Year IX (6 tests, 2 months each)
4. Repeats 4 digits backwards.
6. Rhymes two of three words—day, mill, spring—with three words each.

Year X (6 tests, 2 months each)
4. Reads the copy of a selection and gives a report containing eight "memories."
6. Names 60 words spontaneously—any words of which the subject can think—in 3 minutes.

Year XII (8 tests, 3 months each)
4. Reads two out of three dissected sentences in order in one minute each, *e.g.*, "For the started at we country early an hour."
6. Repeats 5 digits backwards.

Year XIV (6 tests, 4 months each)
4. Problems of fact, *e.g.*, "An Indian who had come to town for the first time in his life saw a white man riding along the street. As

the white man rode by, the Indian said, 'The white man is lazy; he walks sitting down.' What was the white man riding on that caused the Indian to say, 'He walks sitting down?'"

6. Reverses hands of the clock.

"Average Adult" (6 tests, 5 months each)

4. Problem of enclosed boxes.
6. Uses a code to write "Come quickly."

"Superior Adult" (6 tests, 6 months each)

4. Repeats thought of passage heard.
6. Ingenuity tests, *e.g.*, "A mother sent her boy to the river and told him to bring back exactly 7 pints of water. She gave him a 3-pint vessel and a 5-pint vessel. Show me how the boy can measure out exactly 7 pints of water, using nothing but these two vessels and not guessing at the amount. You should begin by filling the 5-pint vessel first. Remember, you have a 3-pint vessel and a 5-pint vessel and you must bring back exactly 7 pints."

The intelligence quotient (IQ) provides a direct comparison of any child's mental maturity with that of others and predicts mental growth a few years hence. Terman (1916) has suggested the following descriptive interpretation of intelligence quotients:

Classification	Range of IQ
Genius, or "near" genius	Above 140
Very superior intelligence	120–140
Superior intelligence	110–120
Normal or average	90–110
Dull or backward	80–90
Borderline deficiency	70–80
Definite feeble-mindedness	Below 70
(a) Moron	50–70
(b) Imbecile	20–50
(c) Idiot	Below 20

The boundaries of each group are not so definitely fixed as it would seem, but should be considered as shading from one group into the other. In other words, an IQ of 90 is not to be considered at a fixed point in the scale but is to be interpreted within margins above and below 90.

Many investigators have studied successive intelligence quotients for the same children over a period of several years by determining their IQ's annually. Some individual variation in successive IQ's for the same child are found, and the average change is 5 points or less. This approximate constancy of the intelligence quotient suggests that a child with an average IQ at ten years of age would probably maintain an average IQ when he is fourteen years of age or older. The distribution of intelligence in the general population places 20 per cent of all children above 110 IQ, or above average: 20 per cent below 90 IQ, or below average; and 60 per cent from 90 to 110 IQ, as normal or average.

A child's intelligence quotient predicts his school progress to some extent. Teachers who wish to supervise progress and study of pupils find it necessary to evaluate a child's behavior in relation to his intelligence quotient. This knowledge does not account for the entire behavior of a child but it prepares the teacher for a better understanding and more considerate interpretation of a child's slow progress, hostile behavior, or indifferent attitude. Pupils who are identified by teachers as "very dull" in their school progress are often found to have intelligence quotients between 70 and 85. These children usually drop out of their grades early, but many of those who struggle through the 8th grade have received promotions because they are older rather than because their achievement warranted it. Seldom do children with an intelligence quotient of 75 succeed in going beyond the 5th grade. The clinics which are a functioning part of many school systems study the entire behavioral history of "dull" children who cannot keep up the pace in the grades by assigning them to special classes in which they can do something at the rate compatible with their mental maturity. Pupils with average intelligence quotients determine the rate of progress and quantity of work done by the grades. Those with intelligence quotients of 100 usually complete high school. On the average, however, the higher the IQ the better is the achievement in high school and college.

About 5 per cent of children in general have very superior intelligence, from 120 to 140 IQ. Terman studied 54 of these very superior children and found 28 per cent of them making average progress, 5.5 per cent were actually retarded one year, but 66.5 per cent were advanced one or two years.

There are distinct differences between bright and dull pupils in their characteristic behavior which teachers need to know in order to direct and guide their studies wisely. These differences are compared by Adams and Walker (1930) and cited by Garrison (1934) as follows.

CHARACTERISTIC DIFFERENCES OF DULL AND BRIGHT PUPILS[1]

DULL	BRIGHT
1. Inability to coördinate two or more mental functions	1. Ability to coördinate any number of functions
2. Difficulty in assimilation	2. Ease of assimilation
3. Learning through detailed, simple material	3. Ability to generalize, pick up clues from less concrete materials
4. Short attention span	4. Sustained attention
5. Slow reaction time	5. Quick reaction time
6. Restricted curiosity and limited initiative	6. Intellectual curiosity and initiative
7. Limited imagination	7. High imagination
8. Personal viewpoint	8. Broad-minded, impersonal attitude toward problems
9. Dependence on criticism and approval of others	9. Self-criticism; intellectual approval highly satisfying
10. Lack of appreciation of intellectual humor	10. Sense of humor
11. Trouble with language symbols	11. Keen language ability
12. Narrow interests	12. Versatility and vitality of interests
13. Slow reading habits	13. Rapid reading habits
14. Dependence on others to show application of previously learned experiences	14. Sensitivity to application of knowledge
15. Inadequate memory for abstractions	15. Logical and accurate memory
16. Observation without generalization	16. Close observation
17. Immediate recall	17. Delayed recall
18. Judgment on inadequate data	18. Ability to reason without going through concrete experiences; suspended judgment until necessary data are in
19. Better performance through repetition without much attention to principles	19. Better performance through understanding principles
20. Emotional bias in action	20. Rationalized feelings
21. Insensitivity to intellectual and aesthetic elements in a situation, unless pointed out by others	21. Sensitivity to intellectual and aesthetic elements in a situation

Much less attention has been given to superior and gifted children in schools than to feeble-minded and dull. Hollingworth (1926) and Terman (1925, 1930, 1931) have assembled valuable data concerning gifted children, those rare individuals whose intelligence quotients are known to extend beyond 180. A composite portrait of a gifted boy is given by Burks, Terman, and others (1930) after a follow-up study of this boy. In order that you may comprehend the characteristics and personality of a boy designated as gifted, portions of David's portrait are given as follows.

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[1] From Garrison, p. 337.

> *David.* This boy was tested by one of us in 1917. At that time he was seven years and four months old and earned a Stanford-Binet IQ of 184. He had not yet attended school, but had acquired a vast fund of information at home, could read fluently, and could perform complicated arithmetic processes. . . . He graduated from high school at age 12–3, winning a scholarship to an eastern university. . . . At age twelve David passed the state examinations for high-school graduates with an average above 90, thus qualifying for a state scholarship carrying $100 a year for four years, in addition to his college scholarship.
>
> Graduating from college at sixteen, with honors, he transferred to another university, where he registered as a graduate student in physical sciences. He was awarded a graduate fellowship after his first graduate year, and intends to remain to get his Ph. D. . . . One of his teachers says that in making reports before a graduate seminar David shows a command of the intellectual aspects of his subject like that which one would expect of a college professor. He intends to make research his life work. . . .
>
> From the time that David was first known to us he has lived more or less to himself and has rarely sought the companionship of other young people. In early childhood he invented an imaginary land which he elaborated in the utmost detail. He also compiled a dictionary of words composed by himself, devised games, including schemes for three-handed and four-handed checkers (age ten), composed stories, plays, and music, compiled statistics, made countless mathematical computations, and kept notebooks of observations upon natural phenomena. Our records show that few of our gifted subjects have combined such intensity of mental life and such versatility of intellectual interests.
>
> David, age eighteen at the time of the follow-up, and in his second year of graduate work, is a tall, slender boy whose somewhat stooped shoulders and pale complexion suggest a sedentary mode of life. He keeps long hours in the laboratory and library, and professors and students alike recognize his ability. Unfortunately, his human contacts are confined very largely to the laboratory and classroom. He is well liked by those who know him, even though they consider him a little "different," but he makes few acquaintances and takes only passing interest in many of the things that stir so deeply the emotions of the average college student. David is not and has never been maladjusted in the ordinary sense of that term; he is merely inclined to be solitary. The indications are that he will develop into a man without eccentricity other than the retiring disposition that often characterizes scientists and scholars (pp. 266–268).

Professor Leta S. Hollingworth, who has been in close touch with the parents of David, includes a number of significant facts pertaining to his infancy, his parents, and his ancestry, in a case history which she has recorded in her book, *Gifted Children.*

Adults, whether teachers or parents, need to be informed of characteristics which identify the gifted child, and trained in the appropriate attitude and relationships toward such a child, so that his abilities will find full expression in an environment which challenges him to his greatest achievement. Blanchard (1928) writes that

> Upon the highly gifted individual, the genius or the near genius, society depends for the innovations which produce progress. These innovations may be in the field of scientific and material things or in the field of thought and ideas. Advance in economic conditions or in social philosophy may be the result. Creative talent adds to the quota of social culture through new compositions in music, literature, or the fine arts; it also establishes more firmly man's conquest over nature by the invention of new mechanical devices. Advance in the arts and sciences, changes in modes of thought, and, in final consequence, modifications of social customs, are due to the relatively small percentage of those exceedingly superior individuals who, by reason of their natural capacities for achievement, become the leaders of the age (p. 92).

The Binet-Simon tests are known to reveal mental abilities in linguistic and abstract subjects, such as reading, history, composition, algebra, and so forth, to a greater extent than they reveal capacities for motor and mechanical achievements. Other tests are needed to identify children's special abilities in drawing, manual trades, music, and the arts, their social adjustments, interests, and personality.

Certain performance tests are used for young children and those handicapped in language which aid teachers in the consideration of study behavior. Some of these tests consist of performance in which various shaped blocks are fitted into their appropriate spaces on a form board which involves spatial relations; or in which the necessary pieces are located to complete the picture of a ship, which involves not only spatial relations but a meaningful pattern of the ship as a ship.

Parents and teachers often remark about children's tendencies to draw things they see or imagine. This ability to represent things observed and experienced has been used by Goodenough (1926) as a measurement of the intelligence of children. It is another kind of performance test in which the child's ability to draw a man is evaluated, Fig. 45. These efforts to represent a man are not scored for artistic ability but for completeness and accuracy with which the parts of the man are represented. Certain scores are assigned each recognizable element such as arms, legs, eyes, for a mental age ranging from 4 to 10. Such performance tests as well as others cannot take the place of verbal tests but they are valuable supplements to the estimation of learning abilities. Patterns of development in drawing and graphic representation also serve as a guide for reading readiness.

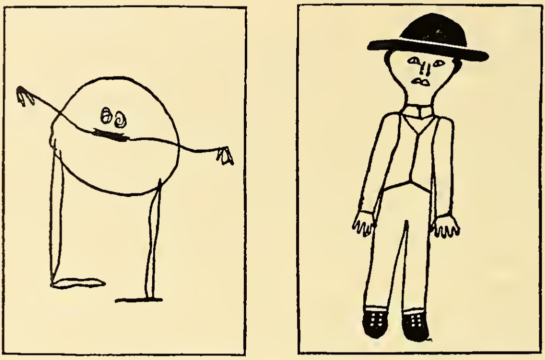

Fig. 45. Evaluations of children's ability to draw a man. The man at the left was drawn by a boy whose chronological age was 4 years, 11 months and mental age 4 years, 9 months; his IQ is 97; his total drawing score is 7. The man at the right was drawn by a girl in fourth grade whose chronological age was 12 years, 3 months, and mental age 12 years, 9 months; her IQ is 104; her total drawing score is 39. From F. Goodenough, 1926, pp. 136, 115.

Another guide which teachers have for a better understanding of the study behavior of children consists of the results from achievement and special ability tests. These tests indicate the relative progress pupils make in their school subjects of arithmetic, language, reading, and so on, also their special ability in the arts and crafts such as music, drawing, painting, modeling, and so on. Better control of the study habits of superior and dull children is obtained by placing them in special classes. The superior children when in a group by themselves can have their study and experience program greatly enriched. The extra work they can do becomes more interesting when they are removed from those children who cannot accomplish as much or as well. The enrichment of the study and investigation program for superior children furnishes an opportunity for their fullest development and for creative expression. The more advance a bright child promises, the broader his intellectual and social program can be made before he begins to specialize. The dull child with little promise, on the other hand, can specialize soon in some activity to his great comfort and advantage.

Growth of intelligence in the young child parallels motor and social development during the early years. Intelligence tests for very young children include the naming of objects, explaining pictures, manipulating form boards, repeating phrases, and so on, examples of which are found in Gesell's schedules of development recognition. The pattern of development from one month of age to five years of age inclusive has been expressed in terms of three categories: motor and manipulative skills; language behavior; and social behavior. Stoddard and Wellman (1934) have presented the patterns of development according to measurements from six sources of research investigators, two of whom are Gesell and Shirley, introduced to you in preceding chapters. Space does not permit their inclusion here, but direct reference can be made to them in their book, pp. 131–136.

The control of study behavior is approached from a very different point of view if teachers are concerned as to whether a child's development in language experience is extensive enough for him to comprehend what he is trying to read and study. In the child world accomplishments in learning are to be evaluated on the child's level and not on the adult's level. There is little if any difference in the nature of thinking expressed by children when they encounter a new situation and that expressed by adults when they attempt to explain some new phenomenon for the first time. Stoddard and Wellman (1934) emphasize this new point of view for those adults who are influential in directing a child's thinking ability. They write,

> Many of the child's conclusions seem to us inadequate because of our superior state of knowledge. To the supergenius our conclusions would probably seem as inadequate as those of the child seem to us. Likewise, conclusions based on our present state of knowledge may seem inadequate several centuries hence. What would have been considered adequate in the field of physical phenomena before the time of Einstein

> can no longer be considered adequate. A conclusion arrived at by a child may be correct in so far as his own experience is involved, although not commonly considered correct (p. 76).

For children the process of thinking is very similar to that for adults. Some personal problem or need in their daily experience must arise in the first place to stimulate thinking. Then the teacher has the privilege of permitting the "thinking through" to be directed into right channels, such as letting the child do things as he is learning, encouraging questions for many of which he himself can figure out the answers by trying various solutions and obtaining additional information. Stillman (1928) states that

> When children can see that the knowledge acquired will further projects of keen interest to them, they are willing to undergo uncomplainingly a large amount of drudgery. Consider a group of children constructing an object to illustrate some phase of their history, something which they can use as a plaything, the model of a medieval castle, for instance. They will willingly tear newspapers into bits to be made into pulp, tear and tear and tear, long after they would have tired of aimless tearing. They search through many books for illustrations. These they examine with great care that the details of construction may be accurate. They build, tear down, and rebuild when they are not satisfied with the effect. They ask advice as to methods. And when it is done, how they love it! One can see the same eagerness and thoroughness, the same search for data, the willingness to suspend judgment until other sources of information have been consulted, the same weighing of relative values among a group of children at the same table constructing a canal lock for the benefit of the whole class. They are eager to see it "work" and to be able to show others. Unquestionably the most vital, thorough studying done by children is that which is necessary to solve problems which have arisen in their own minds, or which connect with their daily lives (pp. 12–14).

The control of study takes care of itself with most fruitful results when a teacher is coöperative, helpful, and does not intrude at the wrong time (p. 366).

When a child is pursuing a quest, in which he studies and learns more on his own initiative than teachers and routine subject matter could teach him in days, give him a psychological right of way with equipment, libraries, field trips, and so on at his disposal. To direct and guide this quest so that it does not become too overwhelming and discouraging, but leads to mastery in some degree, is an art of control. Many adults would be fortunate if they knew how to exercise such an art. Mastery in some measure, which results from control over knowledge and its application, is a source of self-confidence and an exceedingly important factor in behavior hygiene.

Study becomes a joy with the motivation and in the environment just depicted. There is an eager zest for knowledge. Zyve (1934) conveys a new and refreshing attitude toward school and its purpose, and explains the fundamental purpose of one school which is attempting to enable the child to adjust himself to the coöperative social adventure of living. In this and other genuine progressive schools the children are alert to the social, educational, and political happenings of the day. Music, talks, current discussions by radio are a part of their daily schedule. Moral, political, religious, and labor conditions existing locally, nationally, and internationally are dramatized and thought through by group coöperation of the children in the grammar school. They paint murals for their walls, cook food for their luncheons, read and write reviews of children's books, write music and poems, write their own plays, make gardens, model in wood, clay, and snow. They take care of pets. They learn management, leadership, and self-control through responsibility given them for their own school conduct.

Laziness and refusal to study do not become a problem of discipline in the new-type schools. But children absorbed in such mental and social pursuits need to be trained how to relax and to rest during such constant activity as much as they need to be trained how to study and to work. The question can easily arise as to the relation between physical fatigue and mental fatigue. The latter is probably seldom due to persistent work. To quote Thorndike (1900),

> A fair claim, then, to make on the basis of the results obtained is that a regular day's work in the grammar school does not decrease the ability of the child to do mental work. . . . Personally, however, from observation of school children at work in classes, from the histories of individual cases, and from my own experience, I should say that the *amount* of mental work done by pupils in grammar schools is not the cause of one-tenth of the nervous breakdowns among children. . . . The chief responsibility for mental fatigue in the schools and for mental exhaustion in scholars falls, I should be inclined to say, not on a creator who made our minds so that work hurt them; not on the public opinion which demands that children shall do a given amount of work, but upon the unwise choice of material for study, the unwise direction

of effort, the unwise inhibition of pleasurable activities, the unwise abuse of sense-organs, and the unattractiveness of teacher and teaching (pp. 568, 570, 571).

Inefficient study and fatigue may be due to inadequate lighting while at a task or visual difficulties due to defective vision. The sight of school children has been the concern of the United States Public Health Service as evidenced in group studies over a ten-year period of the vision of 30,000 elementary and secondary school children. Collins (1931) estimates that probably one school child in eight has a real defect in vision, an estimate which includes those children who, in the Snellen test, show visual acuity of 20/30 or worse in one or both eyes. Phelan (1935) has revised a joint committee report on conserving the sight of school children in which she lists the eye defects of school children in order of frequency as hyperopia (farsightedness), astigmatism, myopia (nearsightedness), few cases of cross-eyes (or squint), and inflammatory eye diseases. A normal mature eye can see clearly the outlines of objects 20 or more feet away with no muscular effort. In order that teachers and parents may help discover visual difficulties, the following list of behaviors as expressed by Phelan are given here:

1. Attempts to brush away blur
2. Blinks continually when reading
3. Cries frequently
4. Has frequent fits of temper
5. Holds the book far away from face when reading
6. Holds the book close to eyes when reading, or keeps face close to the page
7. Holds body tense when looking at distant object
8. Is inattentive during reading lesson
9. Is inattentive during wall chart, map, or blackboard lesson
10. Is inattentive during class discussion of field trip or visit to museum
11. Is irritable over work
12. Reads but brief period without stopping
13. Reads when he should be at play
14. Rubs the eyes frequently
15. Screws up face when reading
16. Screws up face when looking at distant objects
17. Shuts one eye when reading or covers one when reading
18. Thrusts head forward in an effort to see distant objects
19. Tilts head to one side when reading (p. 34).

Reading difficulties also may be due to visual problems. Recent researches reveal various causes and remedial measures for reading disabilities in children. Monroe (1928) diagnoses the following reading errors and suggests corrective methods: (1) faulty consonants, (2) faulty vowels, (3) letters reversed such as b for d, (4) reversed sequence of letters and words as SAW for WAS, (5) the addition of sounds, TAP read as TRAP, (6) the omission of sounds, TIL for UNTIL, (7) substitution of words, LOVED for LIVED, (8) addition of words, (9) omission of words, and (10) repetition. Gates (1935) gives detailed material for the training of teachers in the diagnosis and remedial methods for individual and class use.

The teacher easily may be confronted with the problem in supervision of study as to whether or not a child's reading and writing vocabularies are extensive enough for him to comprehend and express the material found in various books and other sources of information. Thorndike (1931) presents a list of 10,000 words, arranged in the order of frequency of their use, which occur most in forty-one sources including literature for children, the Bible and English classics, elementary school textbooks, books concerning sewing, cooking, farming, trades, newspapers, and correspondence. He has also developed a dictionary which contains words children need to use, defined in terms which they can understand. These are specific educational aids which should enable children to study more efficiently.

The natural development of children's interests in reading is a basis for motivation of studies at various ages. Terman and Lima (1926) find that children before five years of age are interested in picture books, jingles, simple fairy tales; at six and seven they like better books about the animals, birds, wind, trees, flowers, fairy tales, and short legends and myths; at eight years of age the fairy story yet remains but interest begins in stories of real life, realistic animal and nature stories, and children of other lands; at nine years of age they are reading more for themselves and begin to like stories of real life; when ten years old, more interest in the world arises, in stories of boys and girls, inventions, some biography; at eleven, boys love adventure and mystery stories, aircraft, foresty, electricity, while girls seek stories of home and school life; when twelve and thirteen years of age the greatest reading interest is manifested and there is a tremendous increase in selected literature, boys delve into hero worship, and girls with more sentimental interests are likely to delve into "the great mass of sentimental trash"; by the age of fourteen individual and special interests are more evident, and by the age of sixteen reading interests are similar to those of the adult.

Supervision of study can best be brought under control of the teacher when she is willing to understand and investigate the many forms of behavior toward study expressed by children of various intelligence levels, emotional immaturity, and social interests. To control the behavior of children at study is to manage study procedures so that the child is self-directive to a great extent, to motivate and inspire the child to feel the greatest self-reliance and security in pursuing new knowledge which is to be assimilated with previous knowledge, thereby guiding him to some solution of his problem or inquiry.

Supervision of Discipline

The new-type school, in which teachers coöperate with pupils and direct their efforts, is far removed from the barbaric, autocratic, overbearing coercion of the old type schoolmaster, just as the new type of leadership in industries replaces the traditional "boss" system, and just as parents who understand and cooperate with their children have better control than those who dominate and suppress their children. Mechanically speaking, school discipline consists in maintaining order and obedience to all rules and regulations. Psychologically speaking, school discipline consists in the development of child behavior which is conducive to the most wholesome adjustment to life, of which the school environment is merely a part. Regulations to some extent are essential, especially when classes are large, because unnecessary delay and disregard of others, of property and of rights, arouse disturbances, waste energies, and put "nerves on edge." From the administration of minimum regulations habits of order and consideration for group coöperation should become assimilated into children's behavior patterns so that they will function wherever the children may be.

A social experiment has been conducted by Turner (1935) in a progressive school over a period of two and one-half years. Thirty children from four to six years of age developed their own standard or ideal of conduct, and decided upon the punishments for unsocial conduct in group activities. Their intelligence quotients ranged from 79 to 167. Turner writes,

> The social experiment here described has been an endeavor to air out the minds and feelings of children in a schoolroom and to turn their bases for dispute into workable principles for conscious conduct through a free discussion of their common difficulties . . . our problem confines itself to two general inquiries, (1) Can a group self-government program develop self-control in young children? (2) What are some of the factors which enter into the development of self-control in children? (pp. 1–3).

At the beginning of the experiment the children's attempts at self-defense were expressed in behavior patterns of fighting, destroying, tattling, teasing, crying, or running away from difficulty confronting them. During the experiment a new medium was built up to which they could turn with an inner feeling of safety and assurance of reasonable help toward the solving of their difficulties. This medium was group discussion in an organized and impersonal setting. Turner concludes in part,

> The distinction should be remembered between an adult's disciplinary problem and a child's social problem. Children are likely to react to an adult's problem in the way they think the adult would like to have them. Toward their own problems they react as they feel and think. It is obvious then, that the first condition essential to the development of self-control in young children is a *social freedom out of which natural self-control problems may arise.*
>
> All recorded meetings after the first year were initiated by a child or a group of children because they experienced a vague feeling of personal distress or a well-defined feeling of injustice. Since these experiences prompted all of the self-government meetings we conclude that the process of achieving self-control must involve *an experienced need for an emotional adjustment.* . . .
>
> The standardizing-of-an-ideal was a conscious process to each child. The instinctive reactions to antagonistic events such as hitting, pushing, biting, etc., were inhibited until emotional relief was obtained through discussion and an emotional adjustment was made through *an understanding of a conscious standard by which to act.* . . .
>
> The development of self-control in individual children was therefore conditioned by a fourth factor, namely, *success in the application of conscious standards* (pp. 121–126).

Behavior problems in children are frequent. Any normal, healthy child, in his efforts to explore, to release energy, to get attention, to have his own way, must employ various methods of attack, only some of which are effective. The effective methods, whether good or bad, become habitually fixed very quickly by an adult's approval, remonstrance, or punishment. These habits need to be changed, or established more firmly, according to their contribution to the development of a well-integrated personality in the child.

The behavior problems of children are so intertwined in their relations to certain teacher and adult personalities that they often disappear when the child is removed from direct relationship with that personality in which an adjustment was not forthcoming. Children usually like teachers who try to understand them, and who search for a possible cause of their erratic behavior, rather than accuse them publicly. Such teachers become trustworthy friends to a maladjusted child. Persistent intent of an adult to dominate a child, and refusal to admit mistakes in his control over him, force many a child to alienate himself from teacher or parent. This alienation is often expressed either in defiant opposition or detached indifference. As long as the child does not disturb the teacher in any way his behavior never arouses comment, but as soon as he expresses opposition in any manner or does not respond in routine fashion as expected, he is regarded as a problem. Behavior problems from the teacher's point of view often are those activated by her own unadjusted personality. The silent, semi-hypnotic, fearful child who "never peeps" but obeys every command without question does not disturb the teacher, yet he presents a real behavior problem. The healthy youthful energies of the normal child so often aimlessly productive of noise, need to be directed into channels where their release is constructive and creative. Many teachers will continue subduing and repressing restless behavior with no responsibility for its contribution to the child's maladjustment toward life.

Morgan (1934) reports an analysis of the behavior of a problem group. Several teachers who taught this group of children were asked to check any of over one hundred items of conduct which indicated misbehavior in each child. The teacher who was loudest in her complaints could record the fewest specific signs of maladjustment, and another teacher who made few complaints indicated the greatest number of items. Morgan points out, "It appears as though the teacher with the least appreciation of the actual conduct or its significance was the most disturbed by misconduct, whereas the teacher who had the keenest insight into actual behavior situations made the fewest open complaints" (p. 480). The problem children, when asked to indicate their opinions and attitudes toward the different teachers, liked the teacher best who understood them, who could see their weaknesses, and could help them. Naturally such a teacher would be able to exercise the best control over them, that in which the pupils participated. The teacher's attitude toward the pupil is, perhaps, the keynote in determining the type of adjustment made by the pupil. Withdrawing behavior, or the inability to participate, leads to serious maladjustments for a child and should be the first concern of teachers in the control of discipline. Fortunately teachers are being trained in many school systems, through their clinics and similar advisory units, to identify the quiet, listless, inhibited child so that remedial measures may be used to produce a healthier, more active adjustment to the world outside himself.

Wickman's (1928) thorough study of children's behavior and teachers' attitudes from several points of view merits serious consideration by all adults who assume responsibility to discipline children. There were three inquiries: (1) the teacher's sensitiveness to the pupil's behavior problems, (2) the distinguishing behavior characteristic of problem children, (3) the teacher's ratings of the seriousness of different problems. Various forms were used for teachers' responses so that some standard of comparison in their records was possible. The six most frequently appearing problems in one section of the study of 874 elementary school children were whispering, inattentiveness, carelessness in work, "tattling," disorderliness in class, interrupting in class. The six least occurring were truancy, temper outbursts, stealing money, stealing food, writing obscene notes, and smoking.

The teacher's ratings of the seriousness of different problems were compared with ratings of the same traits by thirty clinicians. Their respective judgments of the five most important and five least important problems are given as follows:

Teachers	Clinicians
The five highest ranking problems:	The five most serious problems:
Stealing	Unsocialness
Heterosexual activity	Suspiciousness
Obscene notes	Unhappiness
Talkativeness	Depression
Untruthfulness	Resentfulness
Least important:	Least important:
Shyness	Disorderliness
Inquisitiveness	Profanity
Sensitiveness	Interrupting
Unsocialness	Smoking
Fearfulness	Whispering

You will note that the clinicians consider the aggressive type of behavior as least serious in the child's personality adjustments. The teacher, however, responsible for the control of orderliness and school achievement, stresses the importance of behavior which interferes with her responsibility; she has not been able to release herself from this bondage so that she can consider the future development of a child's personality.

Dickson (1932) studied 500 children in the California schools and his results parallel in great measure the Wickman study in the East. Some of his comments about his study and that of Wickman's are important enough to be quoted here:

> If the psychologists and mental hygienists are right, those things which cause the most disciplinary troubles to the average teacher are natural to a normal child. As a matter of fact, they are evidences of a personality that is endeavoring to express itself and to grow strong, while those traits that cause the least trouble to the average teacher are symptoms of personality that is on the road to trouble, to serious interference with efficiency and a normal, wholesome personality. . . .
>
> It is apparent from present findings that a considerable amount of behavior difficulty may normally be expected from the average child. To put it in other words, the child who has no behavior difficulty is not normal. He is not developing the character that will fit him for active participation as an adult in the social life into which he must fit.
>
> The teacher, the parent, or the adult who is responsible for the development and control of children must, therefore, be trained to recognize those struggles in each child which denote his development of a normal personality. These struggles must neither be crushed nor ignored, but must be guided so that the individual, through the activities of struggle, develops a fiber of personality that will enable him to give wholesome expression to those which his heredity and training place at his disposal. . . .
>
> The teacher can be trained to recognize the symptoms of an early approximation of serious misbehavior. She can learn to cease punishing symptoms. Nervousness, daydreaming, laziness, lying, stealing, bullying, and fearfulness are a few of the symptoms of trouble in the child's physical and mental health. They reach back to something more fundamental in the child's life. They constitute a challenge to find the cause. Punishment of the symptoms without reaching the cause is almost sure to make matters worse. It is like punishing a child who has a fever to make him well (pp. 95–96).

The significance of some form of punishment as a means of maintaining control has received brief consideration in previous chapters. Here, we shall note further the five ways which psychology suggests for improving the results from punishment, as given by Thorndike (1935).

> The first is to try to make sure in each case that the punishment belongs to the behavior in question. . . .
>
> The second is to forestall the punishment in cases where the want which led to the offense can be satisfied innocently.
>
> The third is to shift the emphasis from the discomfort of A to the relief, security, and comfort of not-A, when it is prudent to do so, as it usually is.
>
> The fourth is to search for ingenious ways of using the sure and almost fool-proof methods of arousing the confirming reaction by attaching relevant satisfiers to the desired connections, in place of punishments for wrong connections. There are now homes in which the ratio of rewards to punishments for children from birth to fifteen years or later has been as high as 20 to 1, perhaps 50 to 1, with apparently excellent results. The motivation to learning in the primary grades of schools changed in a half-century from pain to pleasure to the great advantage of all concerned. If weakness and sentimentality can be avoided and sufficient ingenuity can be exercised, the management of men in all lines by the selection of their good tendencies rather than the repression of bad ones is a hopeful prospect.
>
> The fifth is to arrange in a scientific, or at least a reasonable, manner the punishments which, even after the fullest use of rewards, will still remain as an important means of human control. Much of the use of punishments in the past has been doctrinaire, haphazard, fantastic, and perverted (pp. 151–152).

A baffling type of behavior for both parent and teacher to discipline and control is the behavior of lying. When a child lies, he does it for some purpose of adjustment. Repetition of the behavior is natural; he makes no discrimination in the consequences. To most persons a lie is a lie, and there is no differentiation in adult minds as to the motives back of children's lies. These various motives have been used in an interesting way by Burt (1925) as a means of classifying lies. Morgan (1934) follows this classification in his seven kinds of lies, as follows. (1) The playful lies which are merely make-believe and not lies at all. It is in this phase of a child's experience when his remark is called "a lie" by parent or sibling and the habit becomes established. (2) The lie of confusion which represents the inability to report accurate details. (3) The lie of vanity to draw attention to oneself. The foregoing means of adjustment are more errors in memory, perception, and interpretation than an attempt to lie. (4) The lie of malevolence or revenge which is motivated by hate. (5) The excusive lie which is a result of fear, is often prompted by an adult in control when asking a child in an accusing manner, "Did you do that?" (6) The selfish lie to gain his own ends and deceive others. (7) The loyal or conventional lie to protect a friend.

There are two ways in which discipline of this form of behavior adjustment can become effective; one is for teacher or parent to have the above differentiations in mind when confronting the situation, the other is for the adult to consider the child and the cause back of the lie rather than the statement in itself. Lies prove to be mere symptoms of behavior which will persist in this outlet, or some other equally destructive, if the symptom is repeatedly punished and the cause left to become more intense.

Teachers differ greatly in their ability to discipline children. There are probably more teachers who fail because of their inability to control the behavior of children than of inability to teach school materials. The reciprocal relation between teacher and child which becomes set so quickly is an adjustment in which the personality of both teacher and pupil are intricately involved. If a teacher is a product of the old type of dominating and subduing form of discipline, the old habitual discipline to which she was accustomed will emerge through the most efficient training when once the child-teacher relationship occurs. The more teachers can keep the child himself as the essential consideration during the most annoying behavior and disregard their own sensitiveness, the more effectively they will use psychology in their efforts to control both themselves and the child. As soon as a child realizes—and this realization comes very quickly—that a teacher is trying to understand his mistakes, his annoyances, and his nervous habits, he will usually respond in a coöperative way which is greater reward to a teacher than punishment could ever bring.

The contrast which may be found in disciplinary methods is strikingly presented by a specific disciplinary episode given by Pressey (1933).

> In a certain school Miss A. was one day sent into a classroom to get hold of a group of tenth-grade youngsters who had gotten completely out of control. The class had started on its downfall in a curious fashion. In the middle of the room there were two small columns that supported the ceiling. One chronically failing boy whose seat was behind a column evidently became completely exasperated and proceeded to "shin up" the annoying post. The teacher unwisely shouted at him and he, being well out of reach, proffered some replies. In a few moments another

> lad had climbed the second column. Someone suggested a race between the climbers; in a moment there was a group at the foot of each post, thus preventing the teacher from laying hands on either boy, and before long an elimination tournament was in progress. The teacher shouted, scolded, and even cried. At this point Miss A. was asked to do something. She entered the room at once, sat down at the desk, and corrected themes. Not the slightest attention did she pay to the students, who presently discovered that climbing dusty posts was not much fun. When the groups had dispersed of their own accord, the teacher took a hand. First she asked the two boys that started the trouble what had ailed them. They replied that the posts were a nuisance. She then asked if there were not some more sensible solution than climbing them. In a few minutes the boys of the class were at work moving the desks around the room until the difficulties of seeing and hearing were reduced to a minimum. By this time the session was at an end. On the following morning Miss A. entered the room to find a couple of lads climbing the posts again, but she simply smiled at them, went on with the interesting lesson she had prepared for the day, and soon the boys went back to their seats. The childish boy who had started the trouble continued his gymnastics two or three times that day, but Miss A. never faltered, for a moment, in the work she was doing. By the second day none of the pupils even looked up at these antics and, the third day, the performance was greeted by adverse comment from the other pupils. Miss A. smiled to herself and knew the crisis was over (pp. 178–179).

The teacher's attitude and children's behavior, set out in bold relief, are results of conflict between the child and his inability to adjust himself to the school program. The adolescent youth is eager to work with an adult who tries to understand him, who treats him in a wholehearted, sympathetic manner free from sentimentality. His response to this attitude in teachers and supervisors is immediate, sincerely frank, and loyal.

Supervision of Play

Play is a spontaneous, self-propelling activity which may be simultaneous with the release of energies found in work. Most play is work, and may elicit more strenuous and continuous activity than so-called work. Many of the greatest workers have "played" their way through life. What happens to play when it is supervised? This depends in great measure upon the supervisor or leader. The wholesome buoyancy and creative continuity in genuine play are easily cramped when players are conscious of mechanical supervision. Group play, however, needs wise direction and non-interfering control, especially if it is organized for some purpose. That portion of a child's activity referred to as play in this section is that activity which spontaneously engages the child and removes him from other activities of the moment because of his complete absorption in it. If materials are available his creative responses need no supervision. The supervisor who exercises the most helpful control is one who assists only when the child or the group expresses a need for help or shows signs of deadlock. Play which is supervised and controlled in every move usually ceases to be play; it loses spontaneity and too often becomes work.

The development of play behavior shows many changes with chronological age. The five-year-old child enjoys a few playmates but does not participate in organized play involving rules and competition. By the ages of ten, eleven, and early adolescence, competitive activities are in full swing. The competition, however, is a struggle at first for individual recognition and skill. Later the individual is submerged into group loyalty and group prowess. The collecting tendency reaches its peak at the age of ten and eleven years. According to Durost (1932), the kinds of things collected by boys and girls are rather similar. Boys showed a tendency to collect more guns and flashlights, and the girls paper dolls, pictures of movie stars, and four-leaf clovers. Lehman and Witty (1927) in a study of 5,000 children found that 90 per cent of the boys and girls were not making collections. There was no age level at which the interest in collecting suddenly increased or decreased. Neither did they find in their studies of play activities that the change from one age level to another was sudden. Play interests and changes occur gradually. Naturally the group play activities decrease with age and the largest decrease occurs before the age of sixteen.

With the advent of the group and gang spirit, there is a reaching out from the home, the finding of chums whose opinions are considered superior to others, a love of adventure, camping, hiking, and so on. The adult hoboes of today began the wandering habit in an uncontrolled urge of youth. The desire to camp and hike and get away from home may be motivated by the longing for social comradeship as much as the love of nature. Scout and campfire organizations attract youth in their early teens when individual athletic fervor yields somewhat to the goals and achievement of the group. Here for the first time boys and girls experience identification with the group. They sense the increased ability of the group in which the different abilities of each member are merged into a whole. Coöperation reaches its greatest height in the thrills and surprises resulting from group action. Playground directors are now adopting the practices of scout organizations in setting goals of achievement which can be reached by children at certain age levels. As individual adjustment is being made at a rate commensurate with a child's ability and practice, social adjustments are being stimulated by group feeling and loyalty for a unified plan. Kirkpatrick (1935) writes,

> Coöperation without any formal or emphasized competition is now being promoted successfully in progressive schools by means of group projects and club activities in ways that prepare for modern adult living, and help the individual, while adjusting to the activities of others, to develop his own personality to his own satisfaction (p. 330).

There are frequent opportunities to supervise the play of children who differ in their emotional and intellectual behavior. The child who withdraws from group play needs remedial supervision so that he will regain interest and the ability to coöperate. The normal, healthy child who is eager for play activities needs to experience the satisfaction and joy of getting along with others. Then there is the child who plays too strenuously and too long without rest and who needs wise control over his tireless efforts. The play behavior of bright and gifted children varies from that of other children. Lehman and Witty (1928) studied three groups of children: the mentally retarded with an intelligence quotient of approximately 84, the normal group with a mean intelligence quotient of approximately 100, and the bright children with an approximate intelligence quotient of 119. The differences between the play activities of the lowest and highest groups were as follows. The children of lower intelligence participated in a greater number of play activities. They selected more social games, fewer humorous games, more games involving greater motor response, and more play activities of a religious nature. The children of higher intelligence tend to be slightly less active and slightly less social. According to the reports of Hollingworth and of Terman for gifted children, they are more interested in activities which require thinking, which have remote goals and are more complicated. Naturally the attitude of the gifted child toward play interests of the normal group would isolate him as a somewhat solitary person, who prefers less noisy activities, more originality, more mature interests, and older playmates. A play supervisor needs to exercise considerable discretion and wise judgment in controlling the behavior of bright children during definite play periods. Knowledge of their different characteristics and needs is basic for the development of coöperative participation on their part.

Those bright children with adequate social development may easily develop into leaders of play activities. The extra responsibility to develop coöperative action will enrich their participation and stimulate their more mature minds. Their adjustment to a combination of play and study activities found in some progressive schools permits resourcefulness and creative participation to the extent of their ability. Zachary (1929) followed a group of children in their growth and personality development under the influences of teachers in a progressive school. She gives us a glimpse of these children during the spring term of the tenth grade as follows.

> At this time, they gave a Shakespearian Festival. This involved a serious study of the social conditions of Elizabethan England. The school playground was converted into an English village. Besides involving a play and music and sports there was a tavern in the village where Elizabethan food was served. This time we find that their subject matter again included art, music, drama, poetry, social science, industrial arts, and mathematics but to this are added household arts—both cooking and sewing. The undertaking was rich in subject matter but equally rich in the building of habits and attitudes, in learning how to direct others wisely, and how to coöperate (pp. 293, 294).

To supervise play wisely requires careful study of play habits, play interests, and the play behavior of children at successive age levels. The successful and coöperative supervisor of play should know when to keep "hands off," and how to foster the natural spontaneity of genuine play.

Questions for Yourself:

1. Have you ever had your intelligence quotient determined? If you knew what it was, how did the knowledge affect you?
2. Describe the dullest child you have known. In contrast describe the most gifted child you have known.
3. Some few school teachers are always remembered by each of us. Can you suggest the factors or incidents which cause you to remember one or two of your own teachers?
4. Cite a child behavior problem in school which you think was remedied in the best psychological manner for the child's future adjustment.
5. What is your present attitude toward the possibilities of control over the study, the discipline, and the play of others?

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CHAPTER XIX

VOCATIONAL AND AVOCATIONAL DIRECTION

In Part I some aspects of selection of vocation were considered in which the point of view was from yourself, what you could discover and investigate, what caution and at the same time what initiative you must have, and what responsibility you need to assume in the choice of vocation. We shall now consider a similar subject from a different point of view in terms of those who attempt to direct others along vocational and avocational lines. We shall want to know something of the broader comprehension of the vocational guidance program, the problems that are being recognized and slowly solved, and the need for direction in the light of the future social outlook.

Imagine yourself in the position of adults who are struggling to disentangle, identify, and clarify this complex situation from three broad aspects. First, the analysis of the present equipment and behavior patterns of boys and girls, as growing changing personalities, and their potentialities for the future. Second, the analysis of tasks, positions, and jobs, their requirements and promise at present and in the future. Third, bringing the two analyses together in terms which are interchangeable between characteristics of the person and nature of the work, so that the individual can be directed toward a vocational field with some assurance of happiness and satisfaction.

Vocational Direction

Vocational direction is direction into that activity one adopts for a livelihood and for which there is financial compensation. Avocational direction, to be discussed later, implies direction into that activity which one follows for his own pleasure and self-expression, for which there usually is no financial compensation and no conscious goal. The use of the word "direction" in this chapter is in complete harmony with the word "guidance" used by most authors, but it connotes this slight differentiation. When one directs others, one does not necessarily accompany them toward that destination, they go by themselves; when one guides others, one always accompanies and usually leads. It may seem, theoretically, that vocational counselors, educationists, psychologists, parents, and employers are guiding youth and adults, but, in reality, they stay where they are in their respective positions of influence along the individual's vocational pathway. They may be able to provide you with available guides and information according to their training and experience, but they should not make your decision for you. Those adults who are adequately prepared to give vocational direction observe the ethical principle of the National Vocational Guidance Association that "care should be taken that the choice is made by the individual himself . . . absolute freedom of choice is his inherent right."

It has become a thought habit to limit vocational guidance to the choice of a career, but it is much more than that. The acknowledged definition states that it is (1) the giving of information, (2) assistance and advice in regard to choosing an occupation, (3) preparing for it, (4) entering it, and (5) progressing in it. During this progressive adjustment between individuals and work, formal direction which attempts to be scientific and objective is constantly influenced by informal direction from the home, theater, gang, church, radio, and so forth. The emotional fervor often connected with informal direction through these avenues may exert a lasting effect in vocational planning.

Vocational psychology. Since functions of guidance are inclusive of occupational information, counseling, teaching, and vocational preparation, placement, and of adjustment in work, the vocational field is of interest to many others besides the psychologists. Vocational psychology comprises the two fields of vocational direction and vocational selection. Therefore it is concerned on the one hand with the problem of directing the person who is potentially and progressively best fitted into the appropriate occupation —this is a service to the individual—and on the other hand with the problem of selecting from the available applicants the one best equipped for a particular job—this is a service to the employer. This latter field, which refers to the function of the employment department or personnel staff looking for individuals to fill certain work tasks, is the field of personnel selection. The field of vocational direction, especially that specific phase which pertains to the analysis of man, the analysis of the job, and the coördination of the two, is our major concern in this chapter.

Sound vocational direction cannot make much progress without scientific research as a basis for its principles which are to be applied to the practical situation. This research is vitally concerned with (1) measurement and diagnosis of that conduct or behavior which characterizes those who succeed in the occupation, (2) analysis of job requirements, (3) classification of occupations in behavioral terms, and (4) experiments which reveal the effectiveness of the guidance program in fulfilling predictions. Considerable advance has been made in scientific terminology for the description of human behavior and the detailed analysis of types of work; the combination of the two in counseling requires great art. After choice of the vocational field is made with the aid of counseling, a well-coördinated system is needed to project the cumulative personal factors for any one individual into the next stage of appropriate vocational education and training, then into vocational placement, and finally into occupational adjustment.

Motives Underlying Occupational Choice

For most individuals the ultimate choice of an occupation usually evolves over a long period of vocational influences, for some it arises suddenly from personal and temporary motives, and for others a choice never occurs. Allen (1933), realizing the impossibility of individual guidance for all young people, has developed methods of group guidance under the supervision of counselors but with opportunities for self-discovery and self-evaluation. Within the school curriculum Brewer (1932) recommends exploratory courses in diversified practical arts such as short experiences in each of a number of elementary projects in industry, agriculture, commerce, and homemaking. During elementary school years many schools initiate planned activities for the development of vocational interests in the form of working experience which samples certain work behavior, through observation of workers at their tasks, and through clubs interested in occupational experiences. Through these educational, social, or recreational activities, the guidance counselor may discover the forces which differentiate vocational interests.

Many factors other than intelligence enter into choice of a career. The indirect influences of the family, reflected through parental assumptions that a child shall be a doctor, or a missionary, or shall fulfill "my thwarted ambitions to be a singer," and so on, are often unsatisfactory influences and in many instances lead to maladjustments and misfits which cause great unhappiness and restlessness in work. Parents can be very helpful and coöperative in the gradual development of a child's vocational decision, but they may be poor advisers indeed without some assistance in viewing the matter from the child's needs and not from their own limited vision and possibly selfish motives. Teachers likewise often exert definite influences upon pupils' decisions, but many of them, conscious of their limited training and their unfitness to deal with many situations outside the classroom, wisely refrain from influencing decisions of their pupils in a haphazard manner.

Studies of occupational choices. A study of occupational choices was made in London in which pupils were asked to write down the names of occupations which had appealed to them and to explain why these occupations had appealed. The majority of them were superior in intelligence. The following responses are a few of the typical examples given by Macrae (1934).

> *University Lecturer* (*boy, age 18*). The job is safe. One associates with educated people. There is a scope for carrying on other occupations in one's spare time. The social life attached to college is attractive. There is an absence, to a certain extent, of monotonous work. One would probably avoid the daily crush in trains, etc., in which city workers are involved.
>
> *Secondary School Teacher* (*girl, age 18*). I am interested in children and would like to handle them. In studying to become a secondary school teacher I shall have to go to a University, and, therefore, at the same time I am training for a profession. I am also getting a liberal education. I shall have an opportunity to indulge in other activities, since the hours are not long.
>
> *Pathologist* (*boy, age 17*). I have always had a liking for Botany and Biology. I am fascinated by dissection. I have confidence in elementary first aid. It is a sound job, with income to follow if successful. There is a possibility of travel and mixing with society.

From many examples the most common reason for vocational choice, by far, was a feeling of liking for, or interest in, the job chosen. The emphasis seemed to be on the advantages of the occupation and not the advantages inherent in the person to fit him into the work. The occupational advantages most frequently mentioned included security of position, good pay, good prospects of advancement.

In a study of a group of university undergraduates of both sexes Macrae (1934) found that there were no marked differences in their responses from those of the school pupils. The merits of the job dominated, but personal fitness was given some consideration, as the following examples illustrate (p. 13):

> *Nursing.* Nursing appeals because it makes demands on sympathy. Then it gives scope for manual as well as intellectual work. Hospital life appeals to me and I seem to have qualities suitable for the work—gentleness of manner, soft movements, good hands, enough patience, etc.
>
> *Sailoring.* For sentimental reasons largely (family inheritance!). Also, I consider myself physically and otherwise, well fitted for the job—natural aptitude, in fact, plus a certain amount of first-hand knowledge.
>
> *The Ministry.* The Ministry appeals to me as a profession because it would seem to offer a life of reflection rather than of action. I am also, I admit, attracted by the position of respect and dignity which clergymen seem to occupy amongst their fellow men. In addition, I believe that this profession would allow me sufficient leisure to pursue subjects in which I am interested.

Gifted children were found by Terman (1925) to show greater preference for the following occupations: public service, professional (boys), artistic, semi-professional, agriculture (slightly). The control group, whose responses were compared with those of the gifted group, preferred the mechanical occupations, those connected with transportation, with athletics and clerical pursuits.

Even in the case of brilliant persons the motives underlying choice may be disguised in the form of unimportant considerations. The reason for the vocational preference of a most gifted university graduate is given by Macrae (1933) as follows:

> A student in the faculty of arts of a northern university was greatly attracted by the clever, if frivolous, verses contributed regularly to the university magazine by a distinguished band of medical poets. He was especially attracted by the wonderfully euphonious words, mainly of Greek derivation, which the authors had acquired in the course of their studies and which they used with great effect in their poetical effusions—beautiful words like *systole* and *diastole*. Being himself no mean poet, he experienced a great longing to master Greek of the medical textbooks, and he seriously maintains that this was the chief factor influencing his decision to become a doctor. He completed the medical course, but he has not practised his profession, this being almost the last work in the world that he would like to attempt (p. 10).

Considerable evidence points to the fact that motives for the choice of an occupation arise from impulses rather than reason.

The "rationalization" of the adolescent as to his reasons for occupational choices is easily used to answer some adult's inquiry and therefore may be misleading. Regardless of the best-laid plans, the loss of a loved one due to the yet unfathomed depths of medical science has sent many a brother or comrade into the vocation of medicine. A man may choose the law because of his horror at the injustice in the world. Bitter experience, abnormal tendencies, eagerness for self-adjustment and other emotional "sets" are frequently the beginnings of vocational decisions around which subsequent experiences and rationalizations are concentrated.

VOCATIONAL ADJUSTMENTS

Misfits and maladjustments to work often are traced to a cause inherent in the inadequacy of an occupational choice, and the inability to transfer to another occupation. Longer periods of general education and training with more than one occupation in mind are a remedy for some misfits and conducive to a better adjusted vocational experience. Gates (1932) deprecates

> The fallacy in the notion that a man can learn only one vocation and that only when he is young. If the future brings as radical changes in industrial life as the past fifty years have brought, we should have agencies for vocational selection, guidance, and reëducation in recognition of the entire feasibility of learning a new vocation at intervals of ten years, more or less, as conditions demand (p. 80).

Vocational ambitions beyond rhyme or reason often tempt inexperienced youth, so that many suitable opportunities at hand are unwittingly ignored as they vainly struggle for the impossible. Such young persons are blind to the richness and self-satisfaction of many vocations within their reach. This mental and economic blindness results in an unidentified succession of occupational misfits, dissatisfied lives, and vocational grief. The significance of excessive ambitions and the resulting loss of time, energy, and money have been disclosed in a recent study by Bird and Paterson (1934). They found that often occupational maladjustments accrued when certain individuals mistook ambition for ability and attempted to take commercial correspondence courses for which they were incapable and unprepared. Paterson writes that

> It now appears that such interpretations were unduly optimistic, to say the least, and that enrollment in correspondence courses is evidence merely of aspiration, ambition, and desire for advancement.

> Some people still believe, apparently, that success and happiness are the result primarily of individual initiative, ambition, and the urge to forge ahead. They subscribe to the "hitch your wagon to a star" philosophy and support indiscriminately all movements designed to stimulate human ambition. In this atmosphere arises the well-nigh universal desire for "white collar" work, coupled with an unconscious depreciation of all forms of manual labor.
>
> And so the story of fabulous salaries, miraculous advancement, and the many "good things of life" has been dangled as bait before young men, middle-aged men, and old men with the suggestion that engineering, or law, or accounting can be easily mastered at home. Someone has pointed out that this same process is probably duplicated at the bottom of the sea, where sharks perhaps are busy organizing the suckers into schools for the purpose of teaching them to become flying fish (p. 241).

This report suggests that the excessively high mortality in commercial courses is due to the failure on the part of these schools to select men with sufficient ability to pursue the courses offered or to give adequate vocational counsel. The misdirected use of money, energy, and time, together with frustrated ambitions, is a chronic feeder of discontent and maladjustment.

Incompatibility between characteristics of the worker and requirements of the work is often the cause of dissatisfaction. Macrae (1934) restudied fifty consecutive cases of dissatisfied workers in the records of the vocational guidance department, and found that their motives for entering the occupations in which they were so unhappy, were as trivial as those of school children. The following causes of their dissatisfaction were identified. (1) Unsuitability of intelligence—those with too much intelligence for the requirements of the occupation and those whose intelligence was not enough. (2) Lack of special aptitudes—such as the boy who found the work uncongenial in a commercial office, and later was directed to engineering training after the discovery was made of his marked scientific and mechanical interests and ability; his work then became a hobby. (3) Unsuitability of temperament; almost half of the unhappy persons were temperamentally unsuited—a teacher could not keep discipline, a commercial traveler lacked confidence and "push," a sociable young man found life unendurable while farming in Scotland. (4) Other causes of dissatisfaction were due to maladjustments to life in general. He believes the vocational guidance program

> must include, first, a means of conducting a careful and comprehensive study of the child's potentiality and attainment; secondly, a means of

> investigating fully the occupational requirement; thirdly, a means of helping the child to compare the available knowledge concerning himself with the available knowledge concerning the occupations and so to discover the kind of work in which there is the greatest probability of his being successful and satisfied; and, fourthly, a means of introducing the child to a situation as nearly as possible of the kind desired (p. 75).

One of the principal aims of vocational direction is job or vocational satisfaction. In a recent survey of people's attitude toward work in a typical American manufacturing town, Hoppock (1935) reports some of the causes of job satisfaction as well as discontent at work. The proportion of workers who feel that they are satisfied with their work is difficult to determine but Hoppock concludes from consideration of other studies in vocational adjustment and his own findings that two-thirds of our population may effect fairly satisfactory adjustment without assistance. Some of the important differences between the most satisfied workers and the least satisfied workers in this study and another study with teachers are as follows. The most satisfied workers gave fewer indications of emotional maladjustment; they were more religious; enjoyed better human relationships with their superiors and associates; more of the satisfied teachers were in cities above 10,000 in population; the difference in the average salaries between the satisfied and dissatisfied was not statistically significant; the satisfied felt more successful; family influence and social status were more favorable among the satisfied; more of the satisfied workers "selected" their vocations; the satisfied averaged 7.5 years older than the dissatisfied, their mean ages were 37 and 29.5 years; monotony and fatigue were reported more frequently by the dissatisfied.

Wrenn (1934) studied the vocational satisfaction of 2,424 Stanford University alumni, as a sampling from more than thirteen thousand graduates. There were 19 per cent who would not reselect their present vocation. A total of 82 per cent was found in the same vocation as that chosen in college or one which was similar. Vocational dissatisfaction spread through seventy-one of the ninety-one vocational fields represented. The fact that medicine and law, which were the highest in vocational satisfaction, have the longest professional training indicates that the elements in training analogous to those in practice gave students more of an opportunity to test their own abilities with requirements of the profession. Wrenn suggests two emphases for the college guidance program, provision for all possible assistance in the analysis and evaluation of a student's interests and traits, and provision of "job in miniature" apprenticeship or other valid vocational experiences in preprofessional training programs.

PREDICTION OF VOCATIONAL SUCCESS

Two important research studies over a long period of time have been made, one in London, the other in New York City, to discover the scientific bases for prediction of vocational success. The London experiment by Earle (1931), and others, studied the effects of vocational counseling upon success in chosen occupations. The New York City experiment by Thorndike (1934) and others studied the value of tests, without the intervention of vocational guidance, for prediction of vocational success.

The London experiment, conducted by the National Institute of Industrial Psychology, included 1,200 London elementary school children. Scientific methods of guidance were applied by means of personal interviews; tests; determinations of interests, temperament, and physique; and school records. Systematic deliberations by the advisers with detailed information at hand resulted in a suggested choice of a career for many of these children. The counselors planned to compare these advices with the children's later success at work. A control group was also studied for the relation between their success and suitability of work "as determined by their own wish." In the experimental group a follow-up of vocational careers was made for about 600 children between thirteen and fourteen years of age at the time of the tests. Their industrial histories extended from two years and seven months to four years after they were tested and advised. The chief inquiry concerned the success of those whose work most nearly followed the advisers' predictions as compared with those whose work was farther removed from that recommended. Success meant "satisfactory achievement." The symptoms of success were measured by the length of tenure, the employer's ratings of satisfactoriness, and the employee's ratings of liking or disliking. The follow-up study revealed the fact that when the occupation was similar to that recommended as suitable, the tenure was longer, the employer was more satisfied, and the boy or girl more content in the work.

The New York City experiment, conducted by the Columbia University Institute of Educational Research in its division of psychology, included approximately 2,000 children above ten years of age. The school and work careers of these boys and girls were checked over a period of ten years to study the predictive value of the scientifically determined data from records and from tests of general intelligence, clerical intellect, clerical skills and activities, and mechanical adroitness. For the follow-up study they had, from two sources of information, measures of school adjustment and progress, and measures of an average of teachers' estimates of "conduct," of scholarship, of regularity of attendance, of intellect, of clerical ability, and of mechanical adroitness. After approximately ten years when these boys and girls were about the age of 22, they were again interviewed. Information was obtained about their scholarship, grade reached at school, record of jobs held, the kind of job, salary earned, level of the job and their liking for it. Great individual differences were evident as illustrated by the fact that one person at 21 years of age was earning over $5,000 and others had earned nothing. "The educational careers," writes Thorndike (1933) "could be prophesied with great accuracy from the facts we know at age 14. If we have a person's score at age 14, his subsequent educational career can be prophesied." The vocational careers were not possible to predict with as optimistic results as the educational career. Thorndike continues that "there is relation between salaries earned and psychological and educational measurements, . . . job satisfaction, however, cannot be predicted with any greater certitude than salaries. Satisfaction with one's work can be acquired" (p. 22).

The tests which are used for vocational direction, some of which were referred to in Chapter XIV, consist of those which are qualitative as well as quantitative. Those which are essentially qualitative include tests of personality, character, attitudes, or interests. The quantitative tests refer to measures of aptitudes, achievement, general intelligence, special abilities and skills. There is need for much greater understanding and consistent interpretation of test scores in relation to the requirements of vocations. Hull's (1934) plan for the prediction of an individual's probable success in specific occupations foretells the possibility of a battery of tests, which may take several days to administer, that will forecast forty or fifty formulas for the more important type occupations. A machine is already devised to calculate and record these forecasts, on a card for any individual, which "present in orderly array, and in units of a single uniform scale, permitting of instant comparison, forecasts of the individual's probable success in all the chief type occupations of the world." When youths can examine such cards for those vocations in which their chances of success are best, they probably will have much greater assurance of happiness in their chosen vocation in the light of their interests and the general occupational conditions at the time.

The scope of a vocational counselor's functions can be appreciated more fully by noting Brewer's (1932) questionnaire for vocational counseling and Kitson's (1934) specification of the functions performed by the vocational counselor. Brewer suggests the following inquiries to be made for vocational counseling:

1. What kinds of work have you ever done?
2. What kinds of work have you ever been fond of?
3. Name, in order of choice, three occupations which you are considering for your life work.
4. Why have you selected these?
5. Have you decided on the occupation you named as first choice?
6. What school or college work are you doing (or planning to do) to fit yourself for any of these occupations?
7. Of what help do you think the rest of your school work will be?
8. What school study or studies do you like best? Why?
9. How many more years do you expect to go to school?
10. What do you do outside school hours?
11. What do you do during vacations?
12. What do you do with the money you earn?
13. What school organizations do you belong to? (p. 339).

Kitson enumerates the following responsibilities of vocational counselors. They help individuals to become interested in worthy occupations by finding information about these occupations, and by examining the conditions, opportunities, and rewards obtaining in them; they assist individuals in making an inventory of present assets, physical, psychological, social, and economic; they direct individuals in securing general education and specific training which best prepares them for the occupational endeavor; they assist individuals in finding a job when needed and in meeting the problems which arise.

Scientific research, essential for the extensive technique needed in executing the major functions of vocational direction, will gradually be applied for better adjustment between the worker's behavior and the specific work tasks in the rapidly changing employment world.

Technique of Predicting Work Behavior

The technique of predicting one's adaptability and fitness for specific work tasks demands an ever-increasing understanding and identification of behavior reactions which arise when an individual with his personal equipment meets the job with its mechanized demands. One source of active research vitalizing the technique in use today is that of Trabue and Paterson at the University of Minnesota Stabilization Research Institute. Another source of significant research is represented by Viteles' work, in which technique in the development of the job psychograph was established in close coöperation with the needs of industry. Only some phases of the researches will be given here in which there are analyses of man's equipment, and of occupational requirements, and the putting of the two together for prediction of man's probable success and satisfaction in the occupation.

Trabue (1933) and others were confronted in 1931 with the task of classifying occupationally a group of about four thousand unemployed persons whose histories were to be analyzed statistically and studied intensively. For each person they obtained a record of (a) a complete occupational history of the individual; (b) thorough physical examinations; (c) objective records of educational and intellectual achievements; (d) tests of clerical speed and accuracy; (e) measures of finger and hand dexterity; (f) tests of mechanical ability; (g) interest patterns revealed by tests; (h) personality-pattern tests, and the supplementing of these by personal interviews. The staff of persons in conference about the occupational adjustment of anyone unemployed could see and study his particular strengths and weaknesses as presented on a graphic chart.

An individual summary profile of measured characteristics is shown in the graphic chart, Fig. 46, for a girl who is a graduate from high school but possesses only eighth-grade intellectual ability. She spent four years studying typewriting, stenography, and bookkeeping, but the tests show that she has extremely low clerical abilities. For two and a half years since high school packing cookies in a baking plant is the only job she has been able to hold for more than three months. In order to determine the occupational field into which the characteristics of any one person, as shown in the individual summary profile, might best fit, characteristic patterns of ability for various occupational groups were developed

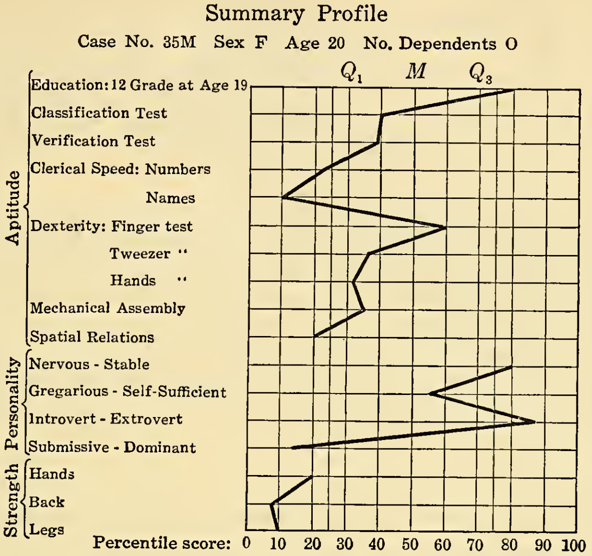


FIG. 46. An individual summary profile of measured characteristics. From M. R. Trabue, 1933, p. 346.

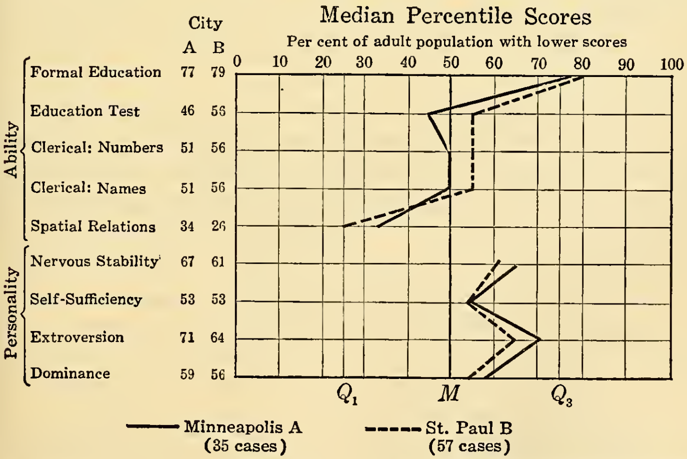


FIG. 47. Occupational ability patterns for two groups of successful sales girls. From M. R. Trabue, 1933, p. 347.

from measurements given to successful employees in specific occupations. The average scores for two groups of successful sales girls in different department stores are shown in Fig. 47 on page 451. These group profiles are referred to as occupational ability patterns, for the reason that distinctive patterns have been found for some of the occupations. It is a disadvantage for success in some occupations to have a high score in certain tests. Trabue (1933) calls attention to this fact when he says,

> The ability-profiles tend to correct very definitely the popular conception that high scores are desirable in every test for every occupation. The girls who make high scores on the educational tests, for example, sell a smaller quantity of goods in a department store than the girls who make only average scores. Similarly, high clerical speed and accuracy seem to be a definite handicap to one's success as a salesgirl. . . . The concept of *typicalness* should be substituted for that of *superiority* in the interpretation of test scores for occupational guidance and selection.

Recent research with the occupational ability-pattern technique upholds the fact that some indication of probable success in work can be given from comparison between the ability-profile of an individual seeking guidance and a given occupational ability-pattern expressed in the same terms. The need which gave rise to the development of these ability-patterns for the unemployed has paved the way for further application and development of these ideas in adult adjustments. They have been used in the adjustment service experiment in New York City referred to later in this chapter.

In the work of Viteles and other industrial psychologists, we shall consider the requirements of the job as determined from work behavior on the job. Job analysis, according to Viteles (1934), is the determination of duties and working conditions, and the qualifications of the man who is to do the work. The analysis is made from the job itself, but to be meaningful it must include the necessary characteristics of the person who is expected to do the work successfully. His guide to a complete job analysis is given below.

1. Identification of the job
2. Number employed
3. Statement of duties
4. Machines used

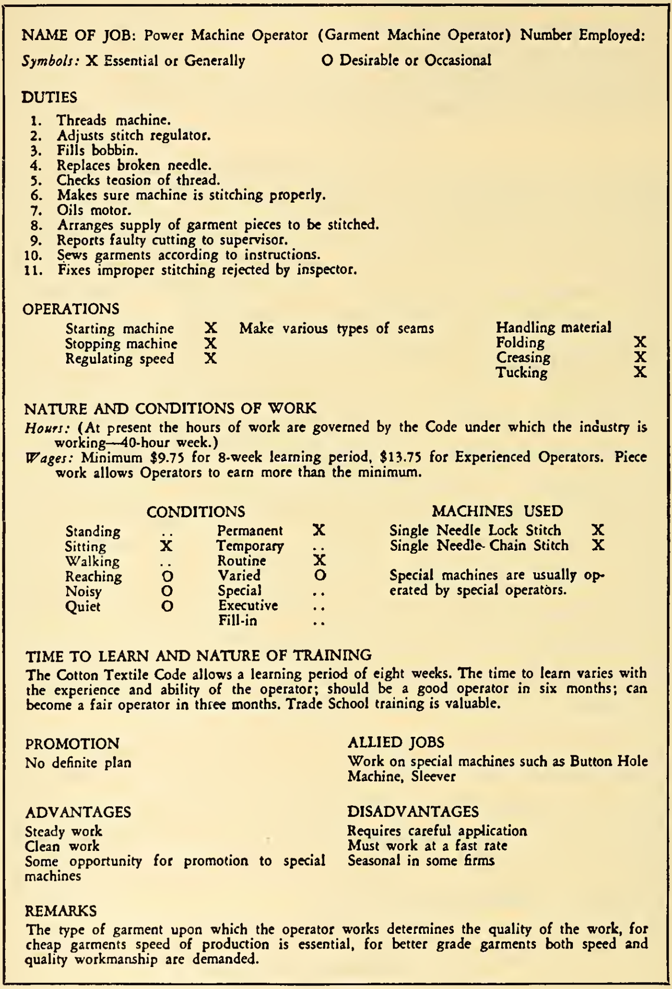
5. Analysis of operations
6. Conditions of work
7. Pay and non-financial incentives
8. Relation to other allied jobs (place in the organization)
9. Opportunities for transfer and promotion
10. Time and nature of training
11. Personnel requirements
12. Special advantageous and disadvantageous features
13. Employment conditions (p. 75).

The development of the job psychographic method was reported by Viteles in 1922 when the abilities required for success on the job in certain departments of a street railway company were identified and rated as to their relative importance. Thirty-two standard terms were used, each one specifically defined so that their meaning was clear to all investigators, and each defined ability was rated in terms of a five-point scale to determine the relative importance in the successful performance of the work.

An illustration of the job psychograph for a power-machine operator is shown in Fig. 48B on page 455, with the requisite qualifications necessary for a worker on this job listed above; the job specification is shown in Fig. 48A on page 454. Some qualifications for this specific work indicate that a female is preferred, between the ages of 18–30, with a minimum mental age of 8 years; visual discrimination and space perception are each of great importance; fifth-grade schooling is necessary, and so forth. The job specification includes detailed information about the requirements of the job. The complete job analyses, Figs. 48A and B, present the necessary points one needs to know for adequate consideration of a particular occupation. The greatest precaution is necessary in job analysis in identifying the successive steps of the simplest operations. To check this yourselves try to analyze the daily occurrence of putting on your coat and compare your steps with those given by Uhrbrock (1934).

OCCUPATIONAL TRENDS

Occupational information is now a preliminary part of all vocational direction, but the consideration of occupational trends has been a negligible factor until recently. These trends are expressed in the shifting which takes place among occupations, workers in one field increase while those in another decrease, occupational opportunities are created while others disappear. Technological changes have made it necessary for hundreds of men to seek new jobs and in many cases train themselves in other skills. For these reasons it is important to have knowledge of occupational trends extending back over a long-time period in order to forecast the rise or fall of specific occupational fields. Scientific control of



NAME OF JOB: Power Machine Operator (Garment Machine Operator) Number Employed:

Symbols: X Essential or Generally O Desirable or Occasional

DUTIES

1. Threads machine.
2. Adjusts stitch regulator.
3. Fills bobbin.
4. Replaces broken needle.
5. Checks teosion of thread.
6. Makes sure machine is stitching properly.
7. Oils motor.
8. Arranges supply of garment pieces to be stitched.
9. Reports faulty cutting to supervisor.
10. Sews garments according to instructions.
11. Fixes improper stitching rejected by inspector.

OPERATIONS

Starting machine	X	Make various types of seams	Handling material	
Stopping machine	X		Folding	X
Regulating speed	X		Creasing	X
			Tucking	X

NATURE AND CONDITIONS OF WORK

Hours: (At present the hours of work are governed by the Code under which the industry is working—40-hour week.)

Wages: Minimum $9.75 for 8-week learning period, $13.75 for Experienced Operators. Piece work allows Operators to earn more than the minimum.

CONDITIONS

Standing	..	Permanent	X
Sitting	X	Temporary	..
Walking	..	Routine	X
Reaching	O	Varied	O
Noisy	O	Special	..
Quiet	O	Executive	..
		Fill-in	..

MACHINES USED

Single Needle Lock Stitch	X
Single Needle-Chain Stitch	X

Special machines are usually operated by special operators.

TIME TO LEARN AND NATURE OF TRAINING

The Cotton Textile Code allows a learning period of eight weeks. The time to learn varies with the experience and ability of the operator; should be a good operator in six months; can become a fair operator in three months. Trade School training is valuable.

PROMOTION

No definite plan

ALLIED JOBS

Work on special machines such as Button Hole Machine, Sleever

ADVANTAGES

Steady work
Clean work
Some opportunity for promotion to special machines

DISADVANTAGES

Requires careful application
Must work at a fast rate
Seasonal in some firms

REMARKS

The type of garment upon which the operator works determines the quality of the work, for cheap garments speed of production is essential, for better grade garments both speed and quality workmanship are demanded.

FIG. 48A. The objective record of Viteles' job analysis for a power-machine operator. The job specification. From J. L. Otis and K. R. Smith, 1934, p. 52.

future employment through a study of occupational distribution means that young people and adults can be directed in their vocational interests and abilities along occupational lines that are growing rather than declining.

QUALIFICATIONS

GENERAL
Sex: Female preferred
Age Limits: 18-50
Preferred Age: 18-30
Race and Nationality: No limitations

PHYSICAL
Height:
Weight:
Use of both hands
Vision: Normal or corrected

COMPETENCY

Coordination A	4
Coordination B	5
Visual Discrimination	4
Space Perception	4

General Intelligence
Minimum M. A. 8 yrs.

EDUCATIONAL

Schooling		*English*		*Mathematics*		*Special*
5th grade	O	Correspondence	..	Addition	X	....
8th grade	..	Grammar	..	Subtraction	X	....
High School	..	Spelling	..	Multiplication	..	....
Technical	..	Inquiries	..	Division	..	....
Business	..	Telephone	..	Percentage	..	....
Correspondence	..	Speaking	O	Dols. Cts.	..	....
				Decimals	..	
				Fractions	..	

TEMPERAMENT
Must be cooperative in working as member of group when team work is employed. Adaptability to repetitive work.

EXPERIENCE
No experience is required where firms train. Trade school training, dressmaking experience is helpful. At present most firms demand experienced operators.

JOB PSYCHOGRAPH
Job: Power Machine Operator

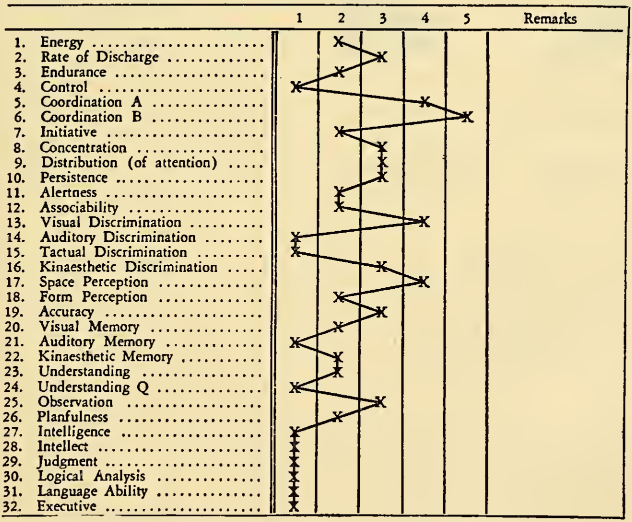


FIG. 48B. The objective record of Viteles' job analysis for a power-machine operator. The requisite qualifications of the worker and the job psychograph. From J. L. Otis and K. R. Smith, 1934, p. 53.

The adjustment service experiment in New York City which is discussed later in this chapter, requested more adequate occupational information so that their clients might be advised with some vision beyond the seasonal situation. Therefore Bingham (1933) conducted a study of occupational trends not only for New York City but for the country at large. The changes in occupations, Fig. 49, show the decrease of one occupational field caused directly by the increase in another. Similar changes and shifts in occupations due to industrial and social advances were evident for vocational fields in general.

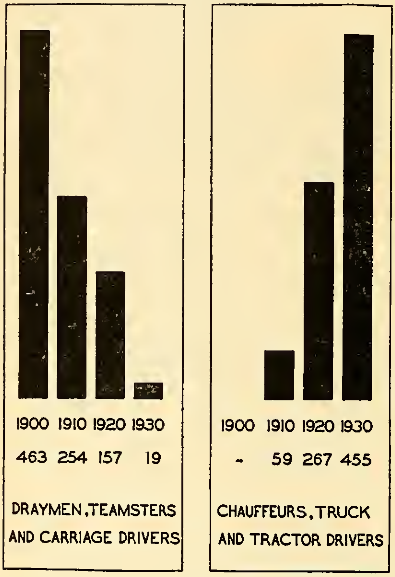


FIG. 49. Occupational shifts in the number of gainful workers per 10,000 of the total male workers in New York City during thirty years from 1900 to 1930. Source U. S. Census. From W. V. Bingham, 1933, p. 12.

Hurlin (1933) in a study of occupational changes from 1870 to 1930 finds that the greatest increase has been in clerical service and the greatest decline in agriculture. This decline in agricultural occupations from over half the working force in 1870 to less than one-fifth in 1930 has been accompanied by increases in other occupations, such as an increase in clerical services from 1.7 per cent in 1870 to 8.2 per cent in 1930; and in domestic and personal service from 9.6 per cent in 1870 to 11.3 per cent in 1930. An outstanding trend has been the great increase in the importance of women as gainful workers, an increase from 14.8 per cent in 1870 to 22 per cent in 1930.

Another important problem is the tendency toward an older average age in the working population. The proportion of persons of productive age, from 16 to 64 years, according to Hurlin, has increased steadily as follows: 55.7 per cent of the total in 1870; 59.5 per cent in 1900, and 63.4 per cent in 1930. He writes,

> In 1890, only 8 per cent of the teachers were over 45 years of age as compared with 17 per cent in 1930. Of musicians, 14 per cent were

over 45 in 1890, and 26 per cent in 1930. Of barbers, 12 per cent were over 45 in 1890, as compared with 25 per cent in 1930. . . . In so far as the increasing proportion of older workers in specific occupations is explained by a longer average work life on the part of members of the group, it means that there will be smaller relative demand for recruits to the occupation. This is a factor which needs to be taken into account especially in the case of the professions and other occupations requiring extensive technical training.

A valuable reference chart, illustrative of changes in occupations, is given in Fig. 50, which shows growth of certain professional groups from 1870 to 1930, according to Hurlin and Givens (1933). The rapid growth of some occupations, as teachers, technical engineers, nurses, and others, cannot promise the absorption of an unlimited number of people. The number of persons training for the growing occupations needs to be controlled as well as the number training for the declining occupations. Bingham (1934) expresses his belief that the future will have less demand for unskilled laborers and increasing opportunity for professional, domestic, and personal service. He writes,

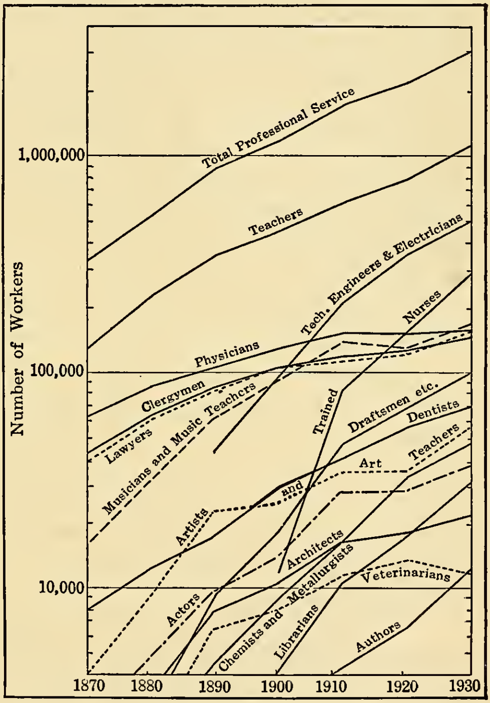


FIG. 50. Growth of selected professional service group. 1870 to 1930. From R. G. Hurlin, 1933, p. 287.

> If my inferences are sound, we shall see a continuing increase in the number of opportunities for work with people, serving their wants, supervising their joint efforts, getting their hearty coöperation, managing them, persuading them, instructing them, helping them in one way or another. . . . This occupational adjustment problem is quite

> as complicated as that of agricultural adjustment which is baffling some of the best brains in Washington. Nevertheless there is every reason for facing it squarely and sensibly, and humbly. As a people we have neglected to provide students and workers with information regarding occupational demand and supply, with educational and vocational guidance training of the right sorts, placement facilities, or opportunity for occupational re-training and adjustment where adults are trapped in economical and technological changes of the industrial mechanism.

The recommendation has been made that a central agency be set up in Washington for the statistical study of the number of people required in specific occupations. This information could then be available for vocational counselors in any part of the country for wiser direction of young people, and more satisfactory planning with adults in meeting their adjustments.

Autobiographies in which one person reveals his vocational progress and adjustment often prove most stimulating to inspire or protect young people in their vocational plans. The vitalizing influence inherent in such autobiographies can be brought to college students in a more representative form and more directly by a record of the vocational experience of their alumni. Moyer (1934) suggests that graduates be provided with a seven-page pamphlet with questions in the margin calling forth a narrative account of their work history to date. This direct information has the advantage of being an outgrowth of recent social conditions and their influence upon the man's experience in the vocation described. If there are no opportunities for tryouts on the job, such information providing firsthand contact with different men's experiences on the same job proves a serviceable substitute.

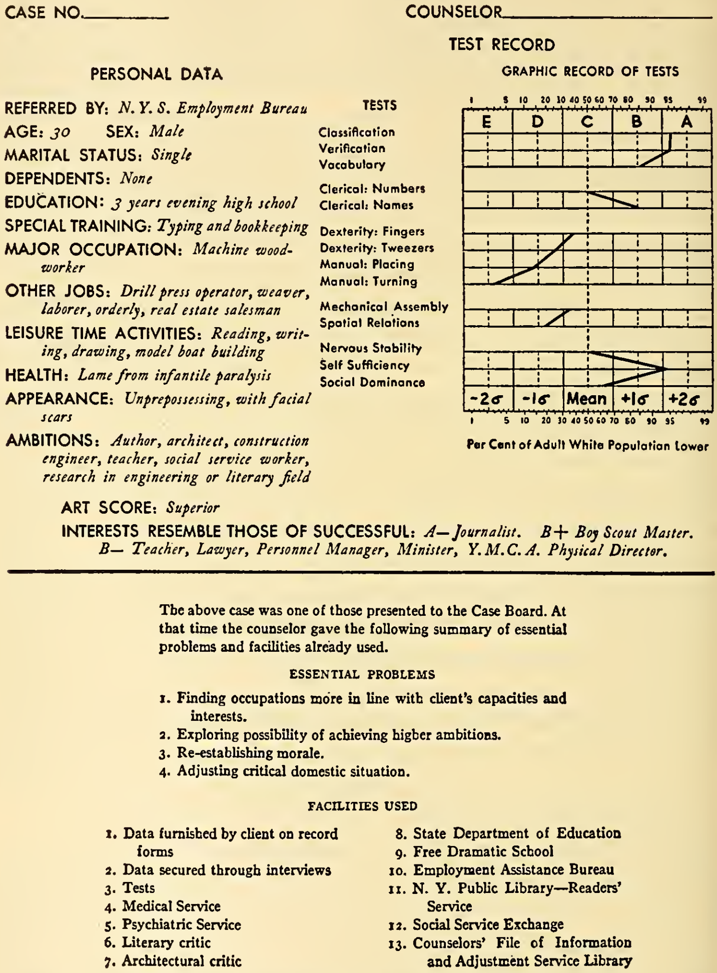
Adjustment and Vocational Direction for Adults

Two important changes in the social and economic forces of our environment have hastened the development of scientific technique for adult direction and adjustment service. One is the great army of the unemployed, the other is the increased amount of leisure time. Even though the effects of these forces are experienced in terms of the behavior of groups of people, the new adjustment for people must take place in each individual apart from the group. This is a long, tedious development requiring the utmost coöperation on the part of the individual. One of the greatest barriers to this coöperation is the long-established belief that adults are unable to learn. The fact that adults do not learn new methods and facts is not that they cannot learn, as formerly supposed, but that they do not want to learn.

Adult guidance clinics existed to some extent before the recent depression. Their real need as a community responsibility has been emphasized by the effects of rapidly changing occupational conditions. Employment offices under state and federal control have been extending their services to include professional workers. Inherent in this expansion of service is a guidance program for all workers who seek their service. A new type of social organization will, no doubt, be formulated to meet the needs for vocational adjustments and individual planning so essential for economic security and employment stability.

A practical application of guidance principles for adults based on recent research methods is now known as the experiment of Adjustment Service in New York City. During the 18 months of the experiment 16,726 clients sought help in bridging the gap between better knowledge of themselves and more adequate knowledge of the world about them. For each person records were made of their vocational, educational, avocational, and personal history; their individual psychographs were developed from tests of abilities, personality, and interests; medical and psychiatric examinations were given to those whose problems required them. The case record data which include the profile of test results were assembled in objective form for consideration by the conference committee. The profile and case record of a machine woodworker is shown in Fig. 51 on page 460. With the facilities at their disposal and the coöperation received from many organizations and agencies, clients were given help in a well-rounded program of activities, including avocational pursuits as well as vocational adjustments.

Although it was impossible to classify many of the client's problems, several problem areas were defined for general discussion, according to Bentley (1935). (1) Threshold-guidance for younger persons, who had had no previous work experience and therefore were the not-yet-employed. (2) Clients between the ages of twenty-five and forty-four presented the particular problem of adult irresolution. (3) Approximately one-fourth of the group came to seek vocational confirmation of the work they were in or preparing to do. (4) Other clients had personality problems—they were unable to advance and didn't know why. (5) Some wished information for appropriate training or recreation. (6) There were a considerable number who were older and forced to get a job for the first time. In this experiment in adult guidance the psychologists have taken the initiative to develop techniques to meet a crisis that may prove second in importance only to the major advance in psychological scientific technique which oc-


CASE NO.________ COUNSELOR________

TEST RECORD

PERSONAL DATA

REFERRED BY: *N. Y. S. Employment Bureau*
AGE: *30* SEX: *Male*
MARITAL STATUS: *Single*
DEPENDENTS: *None*
EDUCATION: *3 years evening high school*
SPECIAL TRAINING: *Typing and bookkeeping*
MAJOR OCCUPATION: *Machine woodworker*
OTHER JOBS: *Drill press operator, weaver, laborer, orderly, real estate salesman*
LEISURE TIME ACTIVITIES: *Reading, writing, drawing, model boat building*
HEALTH: *Lame from infantile paralysis*
APPEARANCE: *Unprepossessing, with facial scars*
AMBITIONS: *Author, architect, construction engineer, teacher, social service worker, research in engineering or literary field*

TESTS
Classification
Verification
Vocabulary
Clerical: Numbers
Clerical: Names
Dexterity: Fingers
Dexterity: Tweezers
Manual: Placing
Manual: Turning
Mechanical Assembly
Spatial Relations
Nervous Stability
Self Sufficiency
Social Dominance

GRAPHIC RECORD OF TESTS

ART SCORE: *Superior*
INTERESTS RESEMBLE THOSE OF SUCCESSFUL: *A—Journalist. B+ Boy Scout Master. B— Teacher, Lawyer, Personnel Manager, Minister, Y. M. C. A. Physical Director.*

The above case was one of those presented to the Case Board. At that time the counselor gave the following summary of essential problems and facilities already used.

ESSENTIAL PROBLEMS

1. Finding occupations more in line with client's capacities and interests.
2. Exploring possibility of achieving higher ambitions.
3. Re-establishing morale.
4. Adjusting critical domestic situation.

FACILITIES USED

1. Data furnished by client on record forms
2. Data secured through interviews
3. Tests
4. Medical Service
5. Psychiatric Service
6. Literary critic
7. Architectural critic
8. State Department of Education
9. Free Dramatic School
10. Employment Assistance Bureau
11. N. Y. Public Library—Readers' Service
12. Social Service Exchange
13. Counselors' File of Information and Adjustment Service Library

FIG. 51. The profile and case record of a machine wood worker. From J. H. Bentley, 1935, p. 19.

curred in the development of the Alpha and Beta tests during the World War.

Avocational Direction

Avocations differ from vocations in several respects. Financial returns are not expected in avocations. Enjoyment, self-expression, and self-realization emanate from avocational activities. The usual drives and motives which stimulate one to choose a vocation for a livelihood are not necessarily present for an avocation. Therefore avocational direction becomes more indirect and is less universally sought for as such. It is often a by-product of vocational direction, therefore many of the problems inherent in vocational counseling are present in avocational direction. Avocational activities might be referred to as secondary vocational activities or as those activities pursued systematically outside the hours spent in vocational pursuits. It is customary to consider an avocational choice the alternative for a vocational choice, and the serious pursuit of an avocation may easily resolve itself into that of a vocation.

Not all persons have an avocation nor do they realize a need for one. Personal interest and a desire for self-expression are the chief motives which give rise to an avocation. When this interest becomes all-absorbing, the activity is referred to as a hobby. Whenever work, whether it be done for a livelihood, or for pleasure with no thought of income, affords self-expression and enriches life, one hears the expression, "My work is my hobby." The more one's activity is free from systematic procedure and from external pressure, the more it becomes a diversion or a recreation and a psychological relief.

Leisure time and what to do with it not only presents many psychological problems but is a source of great enrichment to life. Direction is essential for it to serve the needs of one's total personality in terms of physical needs, social contacts, service to others, creative opportunities, and esthetic interests. Adjustment to one's work and to life in general is often a result of balance between the satisfying use of leisure time and the work which one must do to satisfy the fundamental urges. There is so much more to life than a vocation and the accumulation of material possessions. Pack (1934) suggests that

> Through leisure we must achieve a new standard of living and a new concept of a standard of living. Not so much do we need new or revised

> physical standards, but new psychological standards. That which makes life happy and contented does not consist in a quota of possessions and things but in an attitude of mind. Fill our lives with enough of doing and making and creating, and the physical standards at once become secondary, and, as such, easily controllable (p. 241).

Avocational and leisure-time direction in general are centered upon the individual's needs for self-expression and enjoyment. The demands of a schedule prove to be such severe discipline and in many cases almost "wreck-reational" that relief from speed and strain is essential in avocational pursuits. The gradually evolving social and industrial changes are releasing many hours from the toil of former days, hours which are now one's own, to be turned into the greatest waste or the richest experience of life. Their value, not to be determined by those about you, is realized by your own mental attitude and intent. Are you giving yourself an opportunity to be free from outside forces, from mass pressure, from socially imposed goals? Can you be yourself? Do you do the things you really want to do? Forget time? Realize some accomplishment which proves to be a self-revelation? Have you ever constructed anything? Have you ever experienced the thrill of creating something, making new combinations of well-known materials, words, tones, and so on? Creative and constructive activities afford one of the most fundamental outlets for the use of leisure time and are the essence of many personal adjustments through avocational channels.

Recreational and avocational suggestions may be grouped into those activities in which the individual is a spectator and those in which the individual participates. Within each of these groups—one essentially active and the other essentially passive—a further classification is made of the activities which primarily involve people or primarily involve things and ideas as follows.

Spectator Activities

Among other people. Attending games as foot-, base-, and basket-ball, polo tournaments, tennis matches; witnessing athletics and sport matches of all kinds; the theatre; the concert and opera halls; motion pictures.

Among things and ideas. Going to exhibits, museums; travelling by auto, train, and on foot; listening to the radio; reading to broaden one's outlook on life, or merely to escape from the pressures of the day and moment; meditation.

Participating Activities

With other people. Playing indoor and outdoor games; active in sports and athletic pursuits and contests of all kinds; enjoying conversation for its own sake, with a lively amount of give and take; performing with musical and drama groups in various ways; sharing responsibilities of social contacts; active in civic, social, and philanthropic service; playing with children; participating in the exhilarating art of creative group thinking which transcends the efforts of individual thought.

With things and ideas. All the creative activities with paints, metals, wood, tones, words, modelling clay, foods, and cloth; nature studies; investigations and exploration; astronomy (making your own telescope); discoveries, making things of every description; invention; travelling and hiking; research and experimentation; collecting various things; growing things; amateur photography; driving a car for recreation.

In the pursuit of these interests, keep in mind the fundamental characteristics of avocational direction, which are self-expression, self-realization, and enjoyment. Any of these experiences are the result of revivification which prepares one to meet and weather the most difficult personal adjustments. Rudman (1935) points out

> The recent economic depression may have had a sobering effect on the nation. Perhaps now is the psychological moment to shift the emphasis from the purely material to the cultural and spiritual aspects of life. . . . Boys and girls of high school age must be prepared to face the likelihood that they will have to render efficient and conscientious service for good pay but no riches, and that they will have a good deal of leisure which might well enrich their lives, if they but learned to use it intelligently.

The frenzied pursuit for the material values of life will naturally moderate as leisure hours increase, permitting one to do the things he wants to do. Vocational and avocational direction can then be more serviceable to young people and adults in planning their life activities according to their abilities and interests in the light of available opportunities, and with the cultural service and creative activities more nearly balancing those necessary for self-maintenance.

Questions for Yourself:

1. Obtain and analyze information from five professional persons as to how they decided on the profession in which they have spent the greatest number of years; also how they prepared for it, how they got started, and how con-

tent they are. Obtain and analyze similar information from five skilled workers in your community. Then question five of your college acquaintances as to their vocational decisions, the reasons for their choice, plans for preparation, and how they expect to start.

2. To what extent is there organized vocational direction in your school, college, or university; in your community, private, industrial, or municipal; in your state? What appraisal can you make of their techniques?

3. Have you considered the shift in occupations which may occur in the next few decades in the selection of your vocation?

4. What have been your leisure time activities? Are they psychologically effective in giving you a balance between vocational and avocational activities? Do they stimulate your appreciation of beauty, enrich your life, or provide creative outlets? Are you a participant or spectator?

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CHAPTER XX

CONTROLLING BEHAVIOR OF ABNORMAL PEOPLE

Abnormal is regarded statistically as the deviation from the normal central tendency, and may represent either too much or too little of a trait or way of behaving. Thus genius may be as abnormal as amentia (no mind) and phenomenal memory as abnormal as amnesia (loss of memory). Normal aspects of the situation not only may be under- or overemphasized, but also distorted or changed. This distortion of normal aspects must not be ignored in attempting to understand the abnormal, although you can, no doubt, consider it in terms of the usual categories of too much or too little.

Abnormal does not necessarily mean pathological or morbid. To be sure, the abnormal includes pathological deviations, but there are many deviations from the central tendency which exhibit little or nothing of the diseased or psycho-pathological. It is also well to recall that some deviations from normal may be considered highly desirable. An exceptionally good memory or unusually keen sensory discrimination are abnormal, yet most desirable. The popular notion, however, emphasizes undesirable aspects of abnormality since it is those which most often come in conflict with ethical and social concepts.

You probably will be called upon most often to control and direct undesirable abnormalities in either yourself or your associates. It has been believed that desirable deviations from normal take care of themselves, but we are learning that here also wise control and direction are necessary for full development. Two students may be failing in the same class, but one is so dull mentally that even the best habits of study cannot make him learn the lessons; while the other is mentally bright, but fails because he will not use his mental ability for the task in hand.

Distribution of Abnormality

From this meaning of abnormality, it readily is seen that we should not be disturbed to read that "all of us are abnormal" in some way. The abnormality may be desirable and even approved by the group, hence should occasion no distress. It is only when deviation from the central tendency of accepted human behavior becomes detrimental or harmful, either to ourselves or society, that we must take steps to control and change the abnormality. Some abnormalities are harmful only to the individual and cause no concern from society at large. An abnormal fear of germs may make us seem queer by excessive hand-washing, which may even interfere with work, but society will not be interested. However, if we let our desire for speed in driving a car make us forget obligations to others on the highway, society will deal with us in summary fashion. In similar manner, we may compensate for some repression by behaving in a radical or antisocial manner on the campus, and not be called to task because our violence is limited in effect and quite unimportant beyond our group. But if we let perverted reasoning processes make us political paranoics trying to overthrow governments, society will sooner or later demand our removal from circulation.

There is a marked increase in the number of hospital beds occupied by patients suffering from some form of mental illness. This does not necessarily mean an increase in mental disease as some alarmists emphasize, it may also mean a greater recognition of mental illness as something to be treated as readily as any physical disease is now treated. Or it may mean that better informed people are by their demands forcing the establishment or expansion of institutions to aid those in need. Because we know more about abnormalities, deviations from normal do not therefore mean that such abnormalities are increasing, but that perhaps our ignorance is being replaced by information.

However, this may be the optimistic view. The more rapid tempo of modern life, the stresses of economic depression, the hazards of masses of information forced upon all who look, read, or listen, may be causing more people with feeble minds or inadequate habits of control to go beyond normal behavior. The mind which in the ordinary course of events can carry its possessor safely through the demands of the day may seek the imagined haven of some dream world when disaster threatens. Unemployment and economic insecurity serve to spur many to greater efforts to solve problems, but make others sit down and wait for the world to produce the living they believe it owes them. Still others resort to violence in their emotionalized efforts to force the situation into the patterns they visualize. The violence may be aimed toward self or others and result in excesses indulged in with complete disregard for well-being. Other crises may bring about similar abnormal effects in personalities that have not been developed to meet stresses and strains of existence.

Abnormal people demonstrate deviations from normal behavior because of failure of function caused by deterioration, disease, or accident, or because of innate abilities or disabilities.

The inheritance of abnormalities as a subject for discussion readily promotes debate. We take the hereditary character of our normalities as a matter of course, but we get emotional about abnormalities and tend to rationalize about them. However vigorously and competently the staunch environmentalist may argue against the influence of heredity, the fact remains that careful examination of data usually shows a residue which cannot be accounted for by environmental factors. It is commonly observed that superiority seems to run in some families while inferior intellectual capacity seems to prevail in others. This has been demonstrated by a number of careful studies which seem to show that intellectual capacity is inherited in much the same way as physical characteristics.

The Dwight-Edwards-Woolsey family is cited as an outstanding example of how ability has been transmitted through the germ plasm to produce generations of able people who have been outstanding in their influence on the history of our country. Superior stock is as important to human species as the thoroughbred strain is to subhuman species. The supernormal individual rarely becomes a menacing social problem, therefore is of but passing interest. The subnormal individual is a social menace, therefore we follow the trend of popular interest and allot greater space to him.

Perhaps the best known study showing the inheritance of both strength and feebleness of mind is that made by Goddard (1912) of the Kallikak family. The name Kallikak, given by Goddard to this family is freely translated as "the good-bad family" since, as the story goes, Martin Kallikak became the progenitor of two distinct lines, one "good" and the other "bad." During the Revolutionary War, Martin met a feeble-minded girl and became the reputed father of her child. This boy became the great-great-grandfather of Deborah, the feeble-minded girl in the Vineland institution where Goddard studied her ancestry and found that her great-grandfather, Martin, Jr., became the ancestor of 480 descendants of whom only 46 were regarded as normal. Eighty-two died in infancy. Among the others were included 36 illegitimate, 33 sexually immoral, mostly prostitutes, 8 keepers of houses of ill fame, 3 epileptics, 3 criminals, and 24 confirmed alcoholics.

Martin, Sr., later married a normal woman and started the "good" line of descendants. Only three black sheep, one sexually immoral and two alcoholics, were found in this line, and history does not show them to have been mentally defective. The rest of the 496 descendants stand out as highly respected citizens of their communities.

Goddard's (1916) conclusion that "feeble-mindedness is hereditary and is transmitted as surely as any other character" apparently has been supported by later studies of other institutional cases in Vineland, from which he concludes that feeble-mindedness is inherited according to Mendelian law. This would imply that normal-mindedness is a dominant trait in accordance with Mendel's law of inheritance. There is considerable criticism of the Mendelian character of the inheritance of mental traits, particularly from eugenists and geneticists who are changing the concepts of heredity with experimental data. However much disagreement there may be as to the method or form of inheritance, there is general agreement that mental deficiency is in large measure due to morbid inheritance, and that such deficiency shows a marked tendency to be passed on to offspring. In other words, feeble-mindedness is inherited under certain circumstances. Feeble-minded parents are more likely to have feeble-minded children than are normal parents, and certain forms of mental deficiency do tend to run in families. More technical and detailed discussions can be found in the books by East (1927), Snyder (1935), and others.

Another classic example of degeneracy is that of the Jukes studied by Dougdale (1877) and Estabrook (1915). Among 709 descendants of Ada Juke, whose history has been investigated, there were 64 mentally diseased, 174 sex perverts, 142 paupers, 196 illegitimates, and 77 criminals. Poor social climate alone cannot explain the low grade of this isolated tribe. The genetical components in its make-up must share that burden.

When an abnormality is also pathological, the question of its hereditary origin becomes even more complex and problematical. There is as yet no complete agreement among informed investigators, but the majority admit the possibility of hereditary origin where there is considerable morbid abnormality evident in the ancestral strains. Also the consensus of opinion seems to be that, if the pathological condition is clearly acquired from disease or accident, it is not inherited and cannot be transmitted to offspring through the germ plasm. It must not be ignored, however, that certain inferiorities may be inherited which predispose some individuals to succumb to mental disease under environmental stress.

Types of Abnormality

The types of abnormality may be classified in general as to whether intellectual, emotional, or moral and social aspects predominate.

Abnormalities of intelligence are perhaps best known because we have an index which shows us in a concrete manner how much deviation from a central tendency is demonstrated. If we know a person has a mental age of three years when his chronological age is ten, we believe that we have some index of the amount of his deviation from normal. Or, if we know a person's intelligence quotient is 20 we know he is subnormal in mental development, just as we expect unusual mental ability from the person with an IQ of 150.

Mental tests are useful aids in diagnosing abnormalities of intelligence, but they always must be interpreted in terms of the personal, educational, and social background of the individual. Just as it is important to know chronological age before mental age is meaningful, it is important to know the history of an individual before an intelligence quotient is meaningful. A competent Ozark mountaineer may have a mental age of nine years on the Binet scale, but no one would classify him by that criterion alone as abnormal.

Intelligence is usually regarded as the ability to learn, to profit by past experience, and to adjust to new situations. Lack of intelligence may be either congenital or brought about by disease or accident later in life. *Amentia* is the term used to designate the mental deficiency or feeble-mindedness of those who have been defective from birth; *dementia* is used to describe those who once were normal but have suffered impairment of mental faculties by accident, disease, or deterioration. In either case the persons with defective mental equipment are unable in varying degrees to accept responsibility for their behavior. The various degrees of intellectual deficiency are usually designated as idiocy, imbecility, and moronity.

Idiocy is the lowest and most obvious form of mental deficiency. Idiots are usually physically deformed, their movements are clumsy and uncertain, and their vocal noises rarely develop into articulate speech beyond a few monosyllables. The mental age rarely reaches three years or the IQ 20. This low level of intelligence probably accounts for the lack of muscular control and coördination necessary to learn the most rudimentary routine habits of cleanliness, feeding, or self-protection. Idiots show only crude emotions and their fear and anger may be destructive if physical helplessness does not prevent.

The control of idiots is largely one of providing creature comforts since their minds are too feeble to learn habits of self-direction necessary for them to care for themselves, even if their physical development permits. They are rarely, if ever, aware of their abnormalities and their glimmerings of imagination and memory are faint, if existent. There are no psychological problems for the idiot. Those are produced by him in the other members of his family who must adjust to his existence. Unless the home is adequately equipped to give the idiot the isolation and care his condition demands, it is kindness to place him in a properly equipped institution.

Imbecility represents a somewhat higher form of mental deficiency than idiocy. Imbeciles are slightly better endowed with intelligence than idiots, but they also are not able to manage themselves or their affairs with ordinary prudence and can be taught to do so only to a limited extent. The mental age of imbeciles ranges from three through seven years, and the IQ from 20 to 50. They are physically better developed and coördinated than the idiot, although deformities and abnormalities are frequent and movements are clumsy and inexact. Their language ability is limited by poor memory to a small vocabulary and simple sentences. Enunciation is usually defective. Few imbeciles can read even the simplest selections, although pictures may hold their interest for a limited time. They display little if any initiative and cannot sustain attention.

Control of imbeciles becomes a somewhat more complex matter than control of idiots. Although their bodies may become adult their minds remain childish, therefore any teaching attempted must be adapted to immature levels. Only the simplest tasks not requiring fine sensory discrimination or muscular coördination should be expected. These are taught more easily by imitation, and may need to be retaught often because of poor memory. Like idiots, imbeciles can perhaps be best cared for in institutions which can provide the environment which will make only such demands as their limited mentality can meet.

Moronity includes the highest grade of feeble-mindedness. Morons may be confused with dull normals because they frequently present none of the physical abnormalities of idiots and imbeciles. Even though the mental age of adult morons may reach the twelve-year level, or they may have an IQ up to 70, their minds are incapable of accomplishing what may be expected of normal minds. Their memory is unreliable and reasoning and judgment are defective. They lack constructive imagination and have little ability to foresee the consequences of their acts. Their emotions are crude, finer feelings and esthetic appreciation are usually lacking. If they show a sense of humor it will be for the coarse, more obvious types quite lacking in subtlety. The moron is highly suggestible, therefore can become a ready tool for the more intelligent criminal. His lack of discrimination and poor judgment make him prone to criminal offenses like thievery and more violent offenses showing uncontrolled expression of desires. Thus inferior affective behavior and poor social adjustment on the part of the moron tend to make him a social problem.

The control of the moron can include more work in right habit building than was possible for either of the lower forms of mental deficiency. The moron lives largely by habit, therefore if his training can include a high percentage of well-adjusted habit patterns of behavior he can get along fairly well in an environment which does not make complicated demands upon him. He can be trained to do routine work under supervision and is able to manage his affairs in a relatively simple environment. It is quite possible to manage such an environment outside the home with the help of understanding friends and relatives, but difficult among unsympathetic strangers. Sometimes he can recognize his deficiency and compensate for it to live comfortably among his fellows without having the real incapability ever becoming known to them. However, should the mental incapacity be accompanied by emotional instability and social maladjustment, the environment of an institution may be necessary. Even where these hazards are not present, it may be best to give the moron the training possible in a well-organized and modern institution rather than take chances with an indifferent training in the home where wrong patterns of behavior may be hopelessly fixed.

The rate of mental development should be considered. For the subnormal the mental development lags, for the superior and genius, the mental development spurts ahead of the chronological age. An adult mind in a childish body presents problems of quite a different order from those presented by a childish or feeble mind in an adult body. Each has aspects different from the normally developed mind, which should not be ignored when control and direction are necessary.

Various degrees of mental deficiency may accompany disease or defect in bodily function. Because of their physical and medical concomitants these clinical types of feeble-mindedness are usually diagnosed by the psychiatrist or the physician, as are the psychoses and other types of mental derangement. Since their mental deficiencies can be classed as similar to those given, they will not be described here. Detailed discussion of clinical types can be found in textbooks on abnormal psychology by Morgan (1928), Dorcus and Shaffer (1934), and others.

The *genius* is differentiated by extraordinary ability along some particular line; by mental measurement his IQ is over 140, and measurement of special capacities may also place him well above his fellows. It is quite possible to be a genius in some line and incompetent in others, although abilities do have a greater tendency toward correlation than wide divergence. There is a marked tendency to overemphasize the apparent deficiencies of the genius in relation to his great ability. What would pass unnoticed in the normal person would be regarded as stupid or incompetent in the genius, of whom unconsciously we expect only greatness. Then again, we have become so accustomed to follow the popular belief that genius is close to insanity that we become uncritical. The popular belief is based largely on a few cases of geniuses who have behaved peculiarly, have perhaps been put into insane asylums, or have had definite diseased or psychotic difficulties. If the investigators who collected examples of genius closely associated with insanity had as assiduously published data about the competently sane genius, this popular belief might have been more tempered by reality.

Perhaps with better understanding of the genius we will be skillful enough to control his odd behavior in more competent ways than by confining him in an insane asylum or prison as sometimes has been done. His emotional and social adjustments may be quite as inadequate as those of the feeble-minded. Helping him to direct his energies more effectively toward better adapted behavior habits is a large part, if not all, of the problem of his control. The procedure and methods must, however, be adapted to his mental caliber.

Genius is considerably more than a high IQ or extraordinary ability along some specific activity. Other personality factors often are quite as important, therefore must be considered in any adequate program of training and education. Idiot-savants are persons who have extraordinary ability along one line and are defective along many others. They may be innately feeble-minded or defective or may have been developed through faulty education. Idiot-savants may have unusual ability in music or mathematics, but they should not therefore be put in the genius class. A feeble-minded girl who sang in beautiful clear tones was far from being a musical genius, although some persons hearing her carelessly classified her as such. Her mentality was too feeble to enable her to use her ability effectively, and the control necessary for its development could not be supplied by others.

Effective study of genius, particularly competent genius, is needed. The supernormal is, of course, much less obvious and less morbidly interesting than the subnormal, therefore does not force itself upon attention. Since educators have recognized the problem a considerable body of literature about the superior abnormal person is being accumulated. Psychologists are discovering what an interesting person he is even though uninteresting to the psychiatrist and physician, and, it is to be hoped, will soon know as much about him as they do about the under-endowed and defective.

Emotional abnormalities are quite as possible as abnormalities of intelligence. We cannot detect them as readily, perhaps, and we have no measuring instrument comparable with intelligence tests to designate the extent of deviation from normal. We as yet have no adequate index of the emotional age of a person, hence lack the useful concept of an emotion quotient, such as is supplied for intellectual aspects by the intelligence quotient. It would be convenient if emotional development always correlated with intellectual development, but we know from experience that this is not true. It is quite possible for persons of normal intelligence to demonstrate either too much or too little emotion or other peculiarities and aberrations of emotional behavior. It is likewise possible for a person either under- or over-endowed with mental capacity to keep his emotional behavior well within the bounds of normality.

Like other abnormalities, those of emotion may be innate or brought about through environmental conditioning, drugs, disease, or accident. There may be complete absence of an emotional state, or hyperactivity of emotion. There may be no anger in situations normally arousing anger, or there may be the angry frenzy of madness in a situation which normally would arouse no anger at all. There may be complete absence of fear, or paralyzing terror. There may be no sexual desire, or unbridled lust. There may be complete absence of love and affection, or overwhelming and indiscriminate fondness and love. The gamut for any emotion runs from complete lack through normal activity to hyperactivity. Where emotional habits tend to cluster in this gamut is an important factor in controlling abnormal people.

Emotional instability is characterized by extreme variability of affective responses both quantitatively and qualitatively. Feelings and emotions are easily aroused and readily disappear as the individual quickly goes from one extreme to another or from one emotion to another. Bridges (1930) suggests that:

> This anomaly is probably due in part to excessive emotional sensitivity, and in part to inability to control the emotions. The customary inhibiting habits have not been formed or have been broken down under stress. Emotional instability is a characteristic of childhood, and better affective equilibrium is usually established as the emotions become organized and controlled in the course of development. Emotional instability is thus sometimes called "emotional infantilism." Its occurrence in adults represents a failure in affective development, or a regression due to temporary loss of emotional control (p. 203).

Phobias are morbid fear reactions which may be attached to almost any object or situation. Some of them are so common that names have been given to them, others are described as fears of almost any conceivable object or situation such as fear of solitude, fear of blushing, fear of blood, and so on. Claustrophobia, fear of being in a closed space, is demonstrated by the person who cannot remain in a small room with the door closed. Agoraphobia is the fear of open spaces which is demonstrated by the person who cannot cross or remain in open places. Acrophobia is fear of high places. Pyrophobia is extreme fear of fire.

These abnormal fear reactions are usually learned, but rarely does the person know why he is afraid. If he can be made to recall the activity which brought about the conditioning, the fear can often be reduced to normal proportions. The man who suffered from phobia, referred to in Chapter VII, was relieved of his fear when the grocer told him he had frightened him as a child when he had helped himself to peanuts.

Abnormalities of anger are frequently demonstrated by people who have poor emotional control. Some people are generally irritable, irascible, and quarrelsome. Temper tantrums are uncontrolled anger aroused by some person or event. If these occur in childhood, they are outgrown by the self-controlled adult. Extreme annoyance or suspicion directed toward some person or group may break forth in violent attack. Outbursts of temper may become habitual, therefore training in self-control should be started early.

Other emotions may have abnormal manifestations quite as much as anger and fear, but they too demonstrate lack of control and direction for effective use of energy. Control of others showing abnormalities of emotion consists in re-training them to react with other patterns of behavior; having them avoid emotion-provoking situations; or placing them in environments where unrestrained behavior does not affect others. The last resort usually means restraint or institutionalization. The first method is the most effective for those who are educable. The second is temporary and has few if any permanent benefits for the abnormal person.

Abnormalities of social and moral behavior affect our social stimulus value. Honesty, truthfulness, decency, and uprightness are moral aspects of behavior which greatly influence our social integration. They are so closely interwoven in the consideration for others, which is the more social aspect of behavior, that we can consider them together. To be sure, any abnormality may cause a person to become a social problem, although the social group may be only those within his home.

Recognition of moral and social values seems to develop independently of intellectual or emotional growth. Some highly intelligent persons have defective development of moral and social considerations. Some feeble-minded individuals grasp their import readily. Although society for ages has been built about these considerations, we know almost less about them than we do about the emotional aspects. We know there are all degrees of honesty and truthfulness and altruism, but we have not yet progressed very far in developing an objective measure for any of them. We do not know to what extent the abilities which constitute our social and moral integrity are innate or learned.

We may have congenital liars or criminals, as some contend, but it would be difficult to prove, since no individual has yet demonstrated this specific antisocial trait *before* environment has had the opportunity to influence him. The persistence with which some persons lie or steal in environments favorable to more socially approved behavior would seem to support the idea of some innate deficiency. Also the persistence of honesty and decency in adverse environments could be assumed to depend upon an ability not entirely explained by intellectual or emotional equipment. However, those who contend that so-called morals are learned have excellent examples to support their contention. The high incidence of crime in some areas cannot be explained entirely on the basis that there are greater proportions of defectively endowed individuals in those areas. The social background is such that crime and delinquency are "so common in some neighborhoods and so little frowned upon by adults as to be practically the normal and accepted behavior of boys," as Woodworth (1933) states.

Investigators have searched in many fields for the factors in criminal and delinquent conduct. At first the source was sought in the supernatural which provided demons and evil spirits to explain misconduct. Later the responsibility of the individual was better understood and the source of conduct was sought in some observable factor such as physical malformations of face, skull, and so on. Failing to explain misconduct from physical malformations, the investigators naturally turned toward psychological factors. Intelligence, emotional stability, and social factors were in turn examined to explain the wrongdoer with the result summed up by Woodworth (1933) as follows:

> None of these conceptions of the causation of crime is able to hold its own. You take two boys of the same height or with the same shape of head and face: one steals and the other does not. You take two boys

> of the same intelligence: one steals and the other does not. You take two boys of the same personality: one steals and the other does not. You take two boys from the same neighborhood: one steals and the other does not. Broken homes seem to be a factor in the delinquent conduct of the children; but many children from broken homes are far from delinquent. Of all the factors and influences that have been studied, no single one shows anything like perfect correspondence with criminal conduct. Each may be considered as a stimulus to misconduct, a stimulus rather than a force, since the individual who receives the stimulus is capable of responding either by yielding or resisting. Often a combination of such stimuli will get a response that no single stimulus would have awakened. So we have, as the result of half a century of work, a scientific result, even if not a very clear and simple one: the factors in criminal conduct are many (pp. 125–126).

Delinquency and crime are major social problems which either directly or indirectly concern everyone. Delinquents and criminals are often definitely lacking in recognition of moral and social responsibilities. This may be the result of mental deficiency, emotional instability, or may derive entirely from adverse education and training. Delinquency and criminality are descriptive legal terms to indicate undesirable behavior in social relationships. Social psychology regards the delinquent and criminal as persons who have behavior aberrations which endanger the welfare and solidarity of the group. The psychologist views them as unadjusted individuals with poorly integrated personalities, inadequate habit patterns, and insufficient self-control. The psychiatrist sees them as mentally and perhaps physically diseased and emotionally unstable. The penologist and criminologist see them as lawbreakers who must be incarcerated, punished, and reformed. Society sees them as undesirable members who cannot be trusted and whose behavior cannot be predicted; therefore, cannot be controlled and directed toward accepted social goals.

Delinquents and criminals are of many degrees and varieties. Their crimes vary from petty misdemeanors to murder; from impulsive single infringements in a moment of uncontrolled activity to habitual and consistent criminal behavior. They are not all mentally deficient, emotionally unstable, degenerate, diseased or psychotic, although they may be any or all of these. The delinquent may be a mere child demonstrating antisocial behavior through ignorance, or he may be a defective with deep-seated criminal habits. The defective delinquent presents a quite different problem to society than either the delinquent who is not defective or the feeble-minded individual who is not delinquent. It is also being recognized that the juvenile delinquent differs from the adult delinquent quite as much as the normal child differs from the adult, and should be dealt with accordingly.

CONTROLLING ABNORMAL PEOPLE

The solution of the problem of controlling abnormal people begins with knowing the equipment of the person behaving abnormally, as well as knowing the abnormality itself. This means knowing him from the physical, economic, social, and every other angle as well as the psychological, and devising from the combined information the best means to control his behavior and direct it toward social rather than antisocial objectives. Education and restraint still remain the great mediums of control as in the past, but they are being more skillfully manipulated and adapted to the better known individual. The institutions which society has devised to control its members are being discarded if ineffective, or changed to meet the needs of its abnormal as well as normal members.

Education as a means of control affects everyone, normal as well as abnormal. To educate the individual according to his capacity is a particularly apt ideal for the person who deviates from normal. He may profit little by being forced into the mold designed for the average individual, but may be much benefited by education designed to accommodate his defects or endowments. Education, of course, begins in the home and continues wherever the person may be throughout life. Because the abnormal person does not as readily fit into the general scheme, this early training is particularly important for the over- or under-endowed, because the habits formed here may stress the abnormality in undesirable ways. The defects of the feeble-minded may appear greater because the common routine habits have not been adequately taught even to the extent of his ability. The well-endowed child may even appear defective because incorrect habits are permitted to develop.

Child guidance clinics are established to help parents and guardians gain a better understanding of children. The "problem child" often is also the abnormal child, though not necessarily the subnormal or the defective child. Both the value and the limitations of the clinic in the control of abnormal people is suggested in the following quotation from Southerland (1935):

> Problem children come to these clinics from parents who are anxious about their children, from kindergartens and schools, and from social welfare agencies. These clinics have been of undoubted value in training parents, and through the improvement in the behavior of parents the problems of some of the children have been eliminated. But the clinics have been unable to modify many of the situations which produce conflicts and emotional maladjustments. Many of these problems grow out of the complex life of the modern city and a child guidance clinic cannot alter that, though it may assist parents to make a better adjustment to the life (p. 583).

Schools of every kind are the more formal institutions designed to educate. Their work is complicated by inadequate early training in the home. Nursery schools cannot bridge this gap, although they greatly help the relatively limited number who can employ them. Many schools are designed to meet particular needs of individuals, but obviously a great many schools are yet too crowded or too inadequately equipped to educate either the subnormal or the supernormal individual. Specialized classes and schools solve a small portion of the problem, but there still remain great numbers of abnormal people who must be controlled through other institutions than homes and schools.

Specialized hospitals and asylums are developed for the care, cure, and rehabilitation of the mentally ill. Public attitude and social need are changing these institutions from places of restraint and detention to better ones which endeavor to bring back to self-control and social competence those committed to their care. The account of his experiences related by Seabrook (1935) presents a vivid picture of the modern asylum which not only guards but educates and trains for return to adequate social living. The doctors and attendants were able to restore to Seabrook his lost self-control to his complete satisfaction. To him, control is the test of sanity. People may do peculiar things outside the asylum, but as long as they can control their activities they need not be committed.

Reformatory and penal institutions of the new order also show trends toward a more scientific procedure in controlling their inmates not only for safekeeping but for safe return to society whenever possible. The older conception, with punishment of the offender the primary interest and reform secondary, is being gradually replaced in some quarters by the more effective as well as ethical and scientific procedure, stressed by Southerland (1935), which would take into account the possibility of producing in the offender a socially useful attitude and of putting him on a par with any human being in the recognition of his right to be made socially useful.

The newer penology and criminology stress the importance of attitude both of the offender and the society which he offends. Allport (1935) expresses it thus:

> The almost complete failure of both traditional and "enlightened" penology has intensified interest in the case histories of individual delinquents (Glueck and Glueck, 1930, 1934). These histories reveal first and foremost the importance of attitudes. As a group, prisoners have intense attitudes of self-justification, loyalty, and belief in luck, as well as a tendency to exaggerate the defects of society and of their enemies (Field, 1931). Some reformers rest their efforts upon a policy of habit-training, assuming that reëducation and habilitation are to be achieved only through a slow process of reconditioning each separate habit. Contrary to this policy, others insist that the best way to reform is to change an individual's point of view as a whole. If the new orientation can be acquired, the old and socially unsatisfactory habits will be dropped out and new ones will be automatically acquired. This point of view assumes that general attitudes exert a control over specific and subordinate attitudes, an assumption which derives much support from Dunlap's discovery (1932) that the breaking of habits does not depend on the slow and painful process of reconditioning so much as upon the formation of a new controlling attitude (p. 883).

SOCIALIZATION OF CONTROL

In its broader aspects the problem of controlling the abnormal person has become a social one. It is essential that society recognize that adjustment cannot be entirely within the individual, whether abnormal or normal, but must also obtain in his environment. Not only is the attitude of the delinquent to be changed, but that of the public as well. The prevention of crime, particularly that committed by the youthful offender, is often a matter of proper control of the young to prevent the formation of undesirable behavior, as shown by many studies.

Segregation of the youthful delinquent from mature and often case-hardened criminals and studying him as an individual is a wise step which civilization is beginning to take with increasing confidence in accordance with the theory that by better knowledge and understanding of the individual the appropriateness and effectiveness of his control can be improved. The juvenile wrongdoer is a vastly different problem for society to solve than the recidivist. Education and training often may be used effectively with the first, but they would probably have little effect on the second. Well-staffed and effectively conducted corrective institutions may well coöperate with our juvenile courts in reëducating those delinquents capable of being taught acceptable social behavior.

Within the juvenile delinquent groups, however, there are wide individual differences which must be considered in any program designed on the basis of both individual and social needs. The treatment which would be effective with an intellectually defective delinquent may be quite detrimental if applied to another delinquent, mentally bright but lacking in moral responsibility. Excellent progress has been made in diagnosing the difficulties of the delinquent, but we are as yet depending largely on trial-and-error methods in treating and correcting them. A wholesome tendency on the part of the juvenile courts to ascertain the effectiveness of the treatment recommended is noted in such inquiries as that of Healey, Bronner, and Shimberg (1935).

Other investigators also emphasize the need for accurate data and scientific procedure in dealing with those whom society labels as criminals. It is becoming more and more apparent that effective control of the criminal includes also the control of environmental conditions affecting him, quite as much as for other abnormals and normals. Prison administrators recognizing individual differences in prisoners give those who are capable of reform opportunities to remake the antisocial behavior patterns into socially acceptable ones, only to have society reject them upon release from prison. Warden Lawes (1935) of Sing Sing Prison writes of this tendency of the public to ignore or not believe that those who may have broken some of its rules are human beings capable of changing their behavior patterns. This article was no doubt precipitated by the attempt to bar "Alabama" Pitts from organized baseball because of his prison record. This man had taken advantage of the opportunities to revise his attitude toward society and to train himself not only in athletics but in English and other socially useful acts. Yet he met the stereotyped reaction of society when he attempted to return to it supposedly rehabilitated and developed by his prison sojourn. As has been stressed by Southerland, the attitude of the public must be changed as well as that of the delinquent. In the light of the fact that approximately 200,000 men were released from the prisons of our country from 1932 to 1934, the reader can realize the magnitude of the problem of reorienting them in the social scene rather than embittering them by further social ostracism.

The unregenerate criminals, and those whose criminality is a disease as well as a behavior problem, are not included among those whom the prisons reform for society. Their control is obviously a different matter from social acceptance and opportunity for employment, yet many such are returned to society at the end of their fixed sentence. The indeterminate sentence is for that reason being considered by the more informed judges. By this type of sentence the criminal is returned to society when he has readjusted his attitudes and behavior to social rather than antisocial ends. The fixed sentence may keep a man in prison much too long or it may return him when he yet should be kept under restraint or surveillance.

The youthfulness of our criminal element emphasizes the failure of our social order to meet the needs of a large part of its constituents. More nineteen-year-old persons are arrested and committed to prison than any other age group. Bates (1935), director of the United States Bureau of Prisons, thus explains this phenomenon in part.

> It would not be difficult to contend that most youths of today become emancipated somewhere between the ages of 17 and 21. Seventeen is the average age at which the delinquent boy passes from the control of the juvenile court to that of the regular criminal courts. Twenty-one is the age at which the law decrees a boy is capable of assuming a man's responsibilities. Eighteen is the average age of graduation from high school.
>
> It is not hard to picture the youth of 19 as at the most restive and critical age in his whole life. He has outgrown the restraints of the school room and the control of his family. He has not yet been steadied by the assumption of business or marital responsibilities. Many writers have pointed out that there has been a loosening of the ties which have kept the younger generation in the paths of rectitude in the past. . . .
>
> And so we find the average boy at 19 at the maximum of his strength and physical power and under a minimum of restraint. He undergoes a sudden transition from the control of school life to the complete liberty of an adult man. His nineteenth year, therefore, is a season when crime takes its heaviest toll. Year by year thereafter it decreases. As the boy grows older he tires of adventure. He assumes responsibilities that divert his energies. He is, perhaps, arrested and confined and learns the bitter lesson that crime does not pay.

The youth who has been trained to control his behavior with a wholesome respect for the property and rights of others is not potential crime material. But adequate training and solving the problem of pre-delinquent and delinquent boys and girls must be accompanied by a better social order for effective crime prevention. This emphasis on the need for a better social order is stressed again and again, but as yet the specific methods and agencies for bringing about the change are designated only in the most generalized terms.

If the delinquent can be re-taught, we can adapt him to effective living among people, but if he is deficient in ways which cannot be changed we must control him within institutions best designed for his deficiencies. Many delinquents are mentally deficient, but the high incidence of this abnormality reported for various criminal groups may not present the whole picture. The median intelligence quotients for some groups come close to those for the population at large which would indicate that not only the stupid delinquent gets caught. However, the person who is mentally defective or dull is potential delinquent material either through his own ignorance and lack of insight or when used as a cat's-paw by the more astute criminal.

The subnormal individual has received much attention, but over-enthusiastic idealists have put too heavy a burden upon nurture to overcome his handicaps. We are gradually understanding the needs as well as the limitations of the feeble of mind so that we spend less effort trying to teach him things of no use and little value to him. The English investigators are perhaps a little more ready to see the fallacy of trying to train the defective beyond his capacity. As Cyril Burt (1935) sums up the matter:

> We now realize that no amount of training will "cure deficiency." The special school may improve behavior, implant decent habits, and teach the elements of useful knowledge; but it cannot convert a feeble-minded child into a normal adult. The genuine defective is the outcome of a lack in nature rather than a lack in nurture; and as Prospero laments of Caliban, "upon his nature, nurture will never stick" (p. 103).

The American attitude is more lenient toward trying to train the defective to use the abilities he has, even at the expense of patience and kindness on the part of the people who must employ their incompetent and inexpert services. The attitude of the

American worker with mental defectives is expressed by Davies (1930):

> A modern program for the social control of mental deficiency (that is, both feeblemindedness and intellectual subnormality) involves four major considerations: (1) specialized education and industrial training from the earliest possible age, largely through the agency of the public schools, of all intellectually subnormal children so that they may be fitted as far as possible for community life and prevented from becoming socially incompetent; (2) special training in institutions and in colonies of the more difficult cases in the hope that the socializing forces which the institution brings to bear will overcome the feeblemindedness (social and personal inadequacy) sufficiently to warrant the return of these individuals to the community; (3) organized community supervision furnishing guidance and oversight as needed to all the mentally deficient in the community; (4) permanent segregation of the feebleminded, including defective delinquents, in whom it is not possible to develop the social qualifications necessary for the demands of life in the outside world (p. 375).

It is important to realize that no human being, normal or abnormal, exists outside some social group. Therefore the possibilities of adjusting the social factors must not be forgotten in the zeal to adjust the individual to his environment. Procrustean procedures have no psychological basis as sound methods of control. A wider recognition of this principle will make it imperative for society to exert its energies quite as much to changing its form to adapt to the abnormal individual as to forcing him into the theoretical average mold.

Control of abnormals then consists, first, in knowing and understanding the nature of the abnormality and the central tendency from which it deviates; second, in understanding the importance of the abnormality in adjustment of the individual and the integration of personality. After the individual is understood, training and education according to his capacity, as well as needs, are the primary media for controlling his behavior. The home, school, church, and many social agencies have a part in this education. If these agencies fail, the individual who cannot or will not learn to adapt his behavior to social aims must be provided for in institutions for his care and supervision, which must take over his control. These institutions may succeed in rehabilitating the abnormal person and thus successfully return him to normal social life. Those they cannot recondition they must continue to care for and to provide the control which the individual cannot supply for himself.

Questions for Yourself:

1. In what points has your interpretation of the term abnormal changed with added knowledge?

2. Analyze an example of abnormal behavior, either personal or observed, and suggest specific methodology for effective control.

3. What do you consider the most effective discipline in the control of abnormal people?

4. What abnormality of behavior have you observed which you would regard as a ready source of social illness? What are your suggestions for its control?

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CHAPTER XXI

CONTROLLING BEHAVIOR THROUGH PERSONAL SELLING

A glance at trade reports of goods bought and sold, a walk through a large department store, or a pause in the corner grocery reveals not only the tremendous volume of commodities passing from person to person, but also the great importance of the salesman in the transactions. Add the exchange of such intangible commodities as services, titles, and securities to the tangible ones of food, machinery, real estate, and so on, and it is easy to see why several million people are directly engaged in selling. Other millions are concerned as buyers or consumers, therefore it behooves every competent person to understand and when possible have actual proficiency in the rôle of both buyer and seller.

Personal Selling a Human Relationship

Selling is an important and extensive activity in which the art of making people buy goods is demonstrated. This activity is commonly referred to as salesmanship. It is a human relationship largely influenced by psychological factors which determine the behavior of the seller and of the buyer. Economic and environmental factors also have great importance which must not be ignored in trying to understand human behavior. The psychological factors are isolated for discussion and emphasis in this chapter, but it must be remembered they do not function independently.

Salesmanship is defined and interpreted in various ways, usually with specific limitations. The loose concept which includes all forms of persuasion in every field of endeavor as salesmanship seems to have little value. True, when you sell tangible goods and services you may persuade a customer to buy, but it is an absurd overuse of figurative language to say that every time you persuade you "sell" something.

The evolution of salesmanship from the fraud, trickery, and violence used by barterers of ancient time to the ethical trade practices of the modern salesmen is a long history of psychological changes in attitude. Bennett (1933) discusses the psychological, economic, and social changes which have gradually produced the professional salesman as we know him today; since scientific salesmanship, as he sees it, is not the product of psychological factors alone, unaffected by economic and social conditions. He cites the seven stages in economic development which are marked by as many different types of salesmanship and selling attitudes: (1) commercial adventures; (2) merchant adventures; (3) commercial craftsman; (4) traveling salesman; (5) retail store clerk; (6) specialty salesman; (7) professional salesman. The selling attitude is seen as changing from the seller-centered attitude, one where the interests of the salesman himself are uppermost, to the buyer-centered one where the interests of the customer become the concern of the salesman. Bennett describes the professional salesman who exemplifies the best type of scientific salesmanship as follows:

> The salesman creates true utility for the prospect by such selling procedure. The prospect secures useful goods that he has been persuaded to take by a complete presentation of the proposition, which must necessarily make him feel that he is benefiting from participating in a legitimate commercial transaction. . . .

The customer and his wants, needs, and desires are thus seen as the center of interest in the new salesmanship. Continued customer satisfaction leading to "repeat" sales is an essential interest of the salesman.

The types of fundamental wants grouped into five general classes in Chapter II suggest the wide gamut of motives or incentives which may induce the customer to purchase the commodity offered. Griffith (1934) emphasizes the personal character of buying and selling when he states that the salesman must know about human nature: (1) fundamental desires or wants of human beings; (2) various ways in which the different psychological traits may be thrown into personality patterns; (3) methods of approaching different persons; (4) types of argument that would appeal to one man rather than another; (5) vast ranges of individual differences in mood, emotion, incentive, interest, quickness of decision and action, prejudice. belief, and the like (p. 503).

Process of Selling

The process of selling always involves at least three essentials: first, goods; second, a purchaser; third, a salesman to effect the transfer. The salesman has the task of exchanging such goods for the money or equivalent value which the buyer is willing to give. To accomplish this he may need to point out values which the customer does not readily see for himself. In order to do this effectively he must know the goods from as many sources as possible: observation, manipulation, use, inquiry. He must have this information well organized and learned so that it will be readily available.

Many psychological factors are involved in the nature of goods to determine their effectiveness as stimuli to purchase. It has been repeatedly emphasized that the value of goods does not depend upon the goods but upon the customer who regards them. Therefore goods to be salable must have qualities which the customer can learn to regard as valuable in terms of his individual characteristics, and which the salesman should emphasize.

The person who sells is thus the second essential element in the process of selling. The salesman may be the producer or owner of the goods, or he may be acting as an agent or go-between. He may merely sell what the customer demands, or he may use all his ability to induce the act of purchase by interesting and convincing the customer. The salesman may be untrained and use hit-or-miss methods of salesmanship, or he may be highly trained and experienced. He may use mechanical and rule-of-thumb methods, or scientific procedure tested by experience and scientific methods.

The customer is the third essential element in the process of selling, and he too brings all the varied human characteristics to the selling situation. The value he places upon the goods for sale determines the amount he will pay for them. His surplus of satisfaction in the transaction is measured by the difference between the price he would pay rather than go without and the price he actually does pay.

The customer may buy because of the salesman's persuasive arguments, his pleasing personality, or his high-powered tactics; but he more probably buys because he wants a new car, for example, not only for transportation but for social prestige, for comfort, for a feeling of power, or to impress the neighbors or please his wife. He may need a new car to inflate his ego or to maintain or regain his self-respect.

Link (1932) stresses the importance of knowing the buying habits of the customer. Not alone what he *thinks* but how he *acts*, and what he actually *buys*. His arguments are apparently subscribed to by Griffith (1934) when he states that "a serious attempt is now being made to find out what the purchaser actually wants, why he wants it, and how he has managed to satisfy his wants" (p. 505). Investigators are going more and more directly to customer buying behavior to answer questions of production and marketing. The salesman should strive to get out of his own egocentric predicament, and attend more to the behavior of the customer who may be in a similar predicament with no incentive to get out of it.

With the customer thus viewed as a dynamic person, the problem of the salesman becomes one of learning how best to deal with him in order to control his buying behavior. White (1936) in his discussion of dealing with people by appealing to the want of a feeling of personal worth presents psychological factors which may be used effectively in the human relationships involved in selling. His discussion of indirect and direct methods of presenting ideas so that the feeling of personal worth is preserved is particularly applicable in salesmanship.

Successful versus Unsuccessful Personal Selling

The commandments of good personal selling are simple but most comprehensive. *Know your goods. Know your customer. Know yourself.* Then use your knowledge in controlling the essential elements in the situation to make the satisfactory sale which sound business finds essential.

The marks of a successful salesman vary considerably, but the essential criterion of his success lies in his ability to sell goods and make satisfied customers, many of whom will return for more goods. Many psychological factors seem to contribute toward that success, but no one factor, characteristic, or trait has been parceled out as the specific determiner of selling ability.

The various classes of qualities attributed to successful salesmen by investigators in the practical field and the laboratory show no exact agreement, but there are tendencies toward agreement. Before we attempt to sum up for ourselves the marks of the successful salesman, we shall note what some of these investigators have found. Lester (1935) gives a list of qualities which he has observed to be necessary in sales work. For the successful salesman, of course the balance must swing to the positive side.

> Qualities of *character*—honesty, courage, loyalty, dependability, and unselfishness. These qualities, including breadth of view, culture, and ambition to succeed, are largely bred into the individual over the period of growth to manhood and are influenced by earlier environment.
>
> Qualities related to *personal equipment*—such as education, technical training, commercial experience, knowledge of products sold and the market to be met, and existing commercial practices in industry.
>
> Qualities relating to the *person*—personal appearance and habits of life. Disposition and ability to make and hold friends. Enthusiasm, and ability to pass this quality to others.
>
> Qualities relating to *performance*—ability to think clearly, decide upon a logical plan of procedure, and act promptly in carrying it out. Ability in demonstrating initiative, tactful perseverance, determination, and the exercise of sound business judgment. Ability to give suggestions and take friendly criticism offered, without resentment. Ability to meet emergencies with self-control and a full possession of faculties (p. 181).

Obviously Lester sees the successful salesman very much as a well-rounded competent person in control of all significant phases of his behavior, who has taken the trouble to learn something about his work.

Other investigators stress a variety of traits as desirable. Husband (1934) gives a long list of desirable traits and conditions as gleaned from Anderson (1929). In this list extroversion leads as a desirable trait, followed by such traits as social qualities, appearance, enthusiasm, confidence, aggressiveness, initiative, perseverance, courtesy and tact, absence of emotional problems, intelligence, education, experience, marital status, age, sex, and health. Of these both investigators seem to agree that the most important traits noted are extroversion, good social qualities, aggressiveness, and enthusiasm; those only slightly important are intelligence, education, experience, appearance, health, and emotions; while those which seem to have comparatively no effect are sex, physical size, care of stock, and the like.

Link (1932) in surveying the field finds that the qualities of salesmanship are not general but "relative to specific selling situations. In order to select and train good salesmen the *emphasis must be transferred from the analysis of sales ability in general to the analysis of sales ability in some specific field*" (p. 175). He is emphatic in his assertion that "The salesman who wishes to insure his success, must concentrate on an intensive study of the selling problems peculiar to his field, not on the study of salesmanship in general" (p. 177). The essential "validity of the proposition" may well be of greater concern to the salesman than the particular selling method.

Successful personal selling may depend upon very simple things which when analyzed have psychological concomitants of which the salesman may be quite unaware. However, if he is a good salesman he will know how his customers may be expected to act in response to certain stimuli, so that he can control enough elements in the situation to make a sale. In the following example of successful selling the salesman no doubt understood the satisfaction to be derived on a hot day from the sensation of coldness. He may have known also that the natural reaction to placing something in the palm is to grasp it, and if the object is satisfying to retain it. Some people have not learned to control their desire to possess almost anything they grasp in their hands if it has even a remote value to them. If the article is for sale, they will buy it. Actually getting goods into the hands of the customer is good selling technique for many types of commodities.

A food company made an interesting analysis of the factors in selling certain of its dairy products. It discovered that during the summer months some of its route delivery men were able to sell far more buttermilk and chocolate milk beverage, along with their regular deliveries of milk, than the average run of their delivery men. In order to find out what these super-successful delivery men did the company sent out an investigator who equipped himself with an inconspicuous camera fastened by a belt around his waist, and a shorthand notebook. He made trips with the four or five top salesmen, followed each one on his route and went with him up to the door as he called on each housewife, took snapshots of situations and scenes, and full shorthand notes of the conversations.

When he had finished with the first delivery man, he found that he always carried an ice-cold bottle of buttermilk and chocolate milk beverage in his carrier with the regular sweet milk. After he had done his regular business with the housewife he would take the bottle of buttermilk or chocolate mixture and hand it to her, usually with the request, "Feel how cold it is." Subsequent analysis of the other top salesman revealed essentially the same situation. Each one succeeded in putting a bottle into the hands of the housewife and getting her to feel how cold it was.

The investigator concluded that the unusual sales performance was due to those five words, not alone but in conjunction with what they represent—the preparation on the part of the delivery man, the cleanliness of the carrier, the certainty that the bottles were kept cold. The pictures and notes were used in a dramatized set of slide films and exhibited to groups of route men with the result that they very materially increased their sales of buttermilk and chocolate drink.

Certain Principles of Persuasion

Although much selling may be accomplished without persuasion, just as persuasion may be demonstrated without anything being sold, persuasion does have an important rôle in a large proportion of selling. The persuasion which induces the buyer to possess is demonstrated as a reciprocal relationship. Not only what the salesman wants to sell but what the customer wants or should buy is the subject-matter of persuasion in selling. A partial and condensed survey of a course intended for persons interested in salesmanship will serve to present certain principles of persuasion which are often used in personal selling.

Through mastery and application of the art of persuasion you can get four types of response quite as useful in selling as in any other human relationship: (1) "I like you." (2) "I understand you." (3) "I believe you." (4) "I'll do what you want." For successful selling, the fourth response is the important one. The other three may or may not enter into the situation, but when they do, the fourth response is more readily forthcoming.

Note that these responses involve affective elements as well as logical ones. In the art of persuasion the emotions often are more effective in getting the desired response than reason, judgment, economic considerations, and so forth. Therefore it is highly important in the process of persuasion to control the emotion-arousing elements in the situation so that they abet, not hinder, your logic. You may win your argument on points of logic, but lose the sale and probably the customer on emotional ones. An annoyed person, a disgruntled, angry, or fearful person, is much more difficult to persuade than one whose emotions put him less on the defensive and therefore more open to suggestions. It is well to keep in mind that a person whose self-esteem is put in jeopardy reacts emotionally, and becomes resistant to logic and clear thinking.

The want for a feeling of personal worth is replete with emotional concomitants, therefore the salesman who understands this characteristic need will use techniques of salesmanship which foster it. The indirect method of presenting the idea is very effective when properly used. White (1936) suggests that it may be effective because

A. It appeals to the want of a feeling of personal worth
  1. By sharing the other person's feeling of selfhood (positive appeal).
  2. By enabling the other person to enjoy the satisfaction of having originated the idea (positive appeal).
  3. By creating in the other person fear that unless he acquiesces in the idea he will lose prestige (negative appeal).

B. It prompts the other person to accept uncritically the idea presented (p. 15).

The salesman may well ask himself the question, "Do I present my ideas in such a way that the other person can comply with my wishes and yet feel that he is acting independently?" White believes that such skill distinguishes successful from unsuccessful people.

In the following paragraphs some of the principles of persuasion will be presented in terse admonitions.

Use *you's*. Focus the attention upon the buyer. Make him feel that his problem is the center of your interest, that you are working with him, and that it is to his interest to coöperate. This can be done in part by presenting your arguments somewhat as follows: You will be safer; you will be better protected; you will have comfort; you will find this more convenient; you will be better liked or loved for this; this will make you more powerful, more important; you will gain if you use this; this will save you money, time, or effort. Persuasion thus directed to the customer himself and couched in terms of fundamental wants is more easily effective.

Spend the coin of appreciation wisely and sincerely with an open hand, not wantonly and offensively without sincerity. The currency of appreciation must be *bona fide*, not counterfeit, or it will rebound to your discredit and utterly fail to persuade. The yes-man and the flatterer are not persuasive. The person whose opinions are worth while can be persuasive through a tactful use of meaningful appreciation.

Be friendly, courteous, tactful, and sincere. The warmth of a genuinely friendly voice or smile is quickly recognized. The greet-ing by name establishes rapport and produces a psychological atmosphere of friendliness in which persuasion flourishes. Simulated and false friendliness arouses suspicion and raises barriers against persuasion. These are truisms demonstrated in the selling situation quite as often and as effectively as in the social one.

Avoid argument, but if you must have it, treat each argument as a friendly problem whereon both sides may talk, without undue interruptions or over-positive and belligerent attitudes which irritate and antagonize rather than convince and persuade. Explain instead of arguing. A liberal use of the phrase "for instance" followed by a cogent illustration, which stimulates concrete and vivid imagery, will bring the response "I see" or "I understand."

Inquire before you assert. Inquiry produces an open-minded mood receptive to the assertion. By questions objections can be set forth and explained or met. The atmosphere can be cleared so that the assertion becomes the focus of attention rather than the objections to it.

Be enthusiastic. The bubbling, uncontrolled, and effervescent enthusiasm which so quickly becomes meaningless and absurd is not effective, but the enthusiasm which comes from genuine interest in and knowledge of the object of persuasion is effective. If your own interest is mild, you cannot expect another to be convinced. Enthusiasm is contagious quite as much as is indifference.

Use your imagination because it enables you to put yourself in the other man's place, as well as to see beyond the situation of the moment.

Know your subject and stick to it. To the salesman his subject is both the person he is attempting to persuade, and the goods, the proposition, or service with which he is dealing.

The principles presented show that effective persuasion should include the consideration of psychological factors which are also important in a successful goods-salesman-customer relationship. Many of these same factors will be found to operate in making advertising effective, as you will see in the next chapter.

Questions for Yourself:

1. What qualities do you have which would be assets in personal selling?
2. What habits have you which would prove liabilities in selling?
3. How does persuasion differ from coercion?
4. How can you improve your salesmanship?

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CHAPTER XXII

CONTROLLING BEHAVIOR THROUGH ADVERTISING

More than $726,000,000 was spent for newspaper, magazine, and broadcast advertising in 1935, distributed as follows: in newspapers, $520,000,000; in magazines, $119,000,000; in radio, $87,000,000. The total expenditure averages $8.40 for each person in the United States more than fifteen years old. Additional millions were spent for direct mail, outdoor, and car card advertising. This was not an unusually large outlay; in 1929 about $850,000,000 was spent for advertising space in newspapers alone.

Advertisers maintain that this large expenditure is justified because it helps to create mass production. They admit that it has long been a belief of rulers and of peoples that those who engage in marketing activities are parasites upon society. But advertising, they say, is an integral part of selling, it is a phase of the whole process of the distribution of goods. By stimulating consumption, advertising has stimulated production, and this has made it possible to sell products at lower unit costs.

Figure 52 is a page from the 1935 annual report of Sears, Roebuck and Company, which shows that various advertised articles have not only been greatly improved in style and quality during the years, but that they also have been considerably reduced in price. This trend is most apparent in the case of radios; since the early twenties more than 22,000,000 sets have been bought for American homes.

One method by which advertising is able to stimulate production is by making products or services known, by spreading information about them; obviously the value of any commodity depends upon knowledge of its existence and uses. As Hotchkiss puts it:

> Knowledge regarding a commodity is an indispensable factor in its utility. Whether advertising is the best means of providing that knowledge or not, it is a means and as such must be regarded as an instrument of production.

Scientists and manufacturers will continue to create new products. The public wants them. But the public must be told about them. That is the function of advertising.

Standard of living improved. The net effect of advertising has probably been to cultivate a better standard of living. More people use bathtubs, dentifrices, razors. They eat a more varied and healthful diet, and dress more sensibly. There is less labor and more comfort in homes and offices. Advertising has helped in these things by creating desires, stimulating self-improvement. President Roosevelt says:

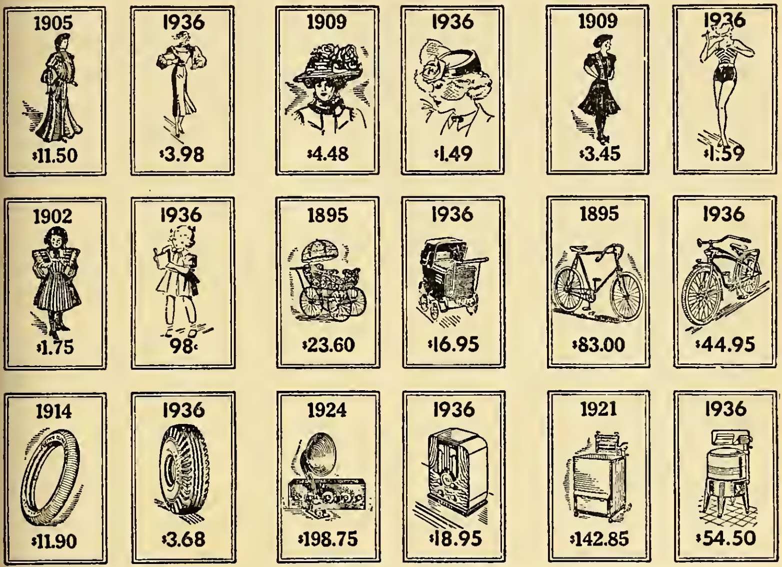


FIG. 52. The old styles and old prices shown above are from Sears, Roebuck Catalogs of years ago. The new styles and low prices are from the 1936 Sears, Roebuck Catalog.

> It is a generally recognized fact that the general raising of the standards of modern civilization among all our people during the last half-century would have been impossible without the spreading of the knowledge of those higher standards by means of advertising.

Of course, in the promotion of many products and services, it often happens that the undesirable are promoted as well as the desirable. The remedy for the advertising of undesirable commodities would be either to stop all advertising or else to place it under some kind of strict government censorship. There are objections to either alternative. Undoubtedly, it is better to believe that in the large world of advertising good will predominate in the future, as it has in the past.

PROBLEMS OF ADVERTISING

For commodities, the purpose of advertising is to sell or help sell. For services, facilities, or beliefs, advertising seeks to secure acceptance. In a broad sense, advertising may be defined as the presentation of a proposition to the people in such a way that they may be induced to act upon it. Between advertising to sell and advertising to mold opinion are such forms as institutional and good-will advertising. Public service corporations, insurance companies, banks, hotels, and other companies which sell service instead of tangible merchandise often try to explain their ideals or practices in such a way as to gain the friendly sentiment of readers.

Since the purpose of advertising is to influence people to act or feel in a certain way, it follows that the problems of advertising are largely psychological. From the psychologist's point of view, these problems may be divided into two parts:

1. *To whom may the commodity be sold?* This entails a study of the habits of people in using and buying commodities.

2. *How may the commodity be sold through advertising?* This entails a consideration of how people may be influenced to buy a particular commodity. It is divided into three subjects: (a) What appeals should be used? (b) How should the appeals be presented? (c) Through what mediums should the appeals or advertisements be presented?

1. *To Whom May the Commodity Be Sold?*

The answer to this first question comes from a study of the human aspects of a market. Before an advertising campaign can be prepared, the advertiser must ascertain to whom it is possible to offer his product for best sales.

In any such study of the market, there would arise the questions: Who are the buyers and users of this commodity or product? Where do they live? How many are there? How large is their need for this product? How do they satisfy this need? In what ways? What are their preferences, likes and dislikes, with reference to the various brands intended to fill this need? It is evident that, in so far as those questions deal with the desires, tastes, modes of living, and habits of buying of potential customers, such questions are largely psychological.

In general there are two sources of information which will help to determine to whom a commodity may be sold; one is available published material, the other is information gathered by first-hand investigations.

Material secured from published sources of information often furnishes nothing but a desirable background; it may not offer specific answers to the question at hand. For instance, there are all kinds of problems which depend upon facts about population, many of which may be answered by turning to various government reports, such as census reports.

Data on density and distribution of population suggest certain group characteristics of buyers which are invaluable to the advertiser. The number of people in the United States, the number of families, the number of Negroes and other racial groups, the density of population to the square mile in various areas, the proportion of rural and urban population, are all facts of fundamental importance in marketing. The proportion of illiteracy in various sections is important, because advertising depends upon the ability to read. Even more important is the matter of incomes of various amounts in relation to population, and how this income is spent.

Other sources of published information are trade associations and societies, trade publications, newspapers, magazines, directories, university and private research bureaus, governmental bureaus, bulletins of banks and chambers of commerce.

The Questionnaire. However, information which is already available is necessarily somewhat old. When you talk to a group of buyers, you are not talking to a convention, you are talking to a parade—a swiftly passing parade. Data must be fresh. Moreover, it is possible to determine specifically a customer's likes, dislikes, and habits only by going directly to the customer. This is not so difficult as it sounds. It is made easier by the principle of *mass similarity* and by the principle of *sampling.* The first principle means, simply, that most people are startlingly alike. Fred C. Kelly in his *Human Nature in Business* points out that if you were to stop a thousand men at random and ask them what size of shoe they wore, and were then to repeat the question to another thousand men on another street, the chances are that almost exactly the same percentage in each thousand would be found to wear number nine. He says the Army knows that 230 men out of every thousand wear hats of size 6⅞. The principle of sampling is based upon the statistical regularity of quantities. It means, simply, that a fair number of items chosen at random from a very large number is almost certain to have the characteristics of the larger group. Buyers of fruit can tell the quality of a whole shipment by opening a few barrels in each car.

Thus, by the use of these two principles, it is possible to ask questions of a few and get the sentiment or nature or habits of the many. It must be borne in mind, however, that the fraction chosen for such research should be representative of the whole.

To record the information gathered, whether by personal interview or by mail, the questionnaire is used. When responses are sought by mail the questionnaire is preferably brief and simple; more information may be asked when the interview is personal.

A good example of the use of research and of the questionnaire is found in the case of General Motors, whose president, Alfred P. Sloan, Jr., believes:

> Modern industry with its large-scale operations tends to create a gulf between the customer and those responsible for guiding the destiny of the institution. We can no longer depend upon casual contacts and personal impressions—our business is too big; our operations too far-flung.

In Fig. 53 are two simple questionnaires in this General Motors series, as well as General Motors' conception of the function of consumer research.

2. *How May the Commodity Be Sold through Advertising?*

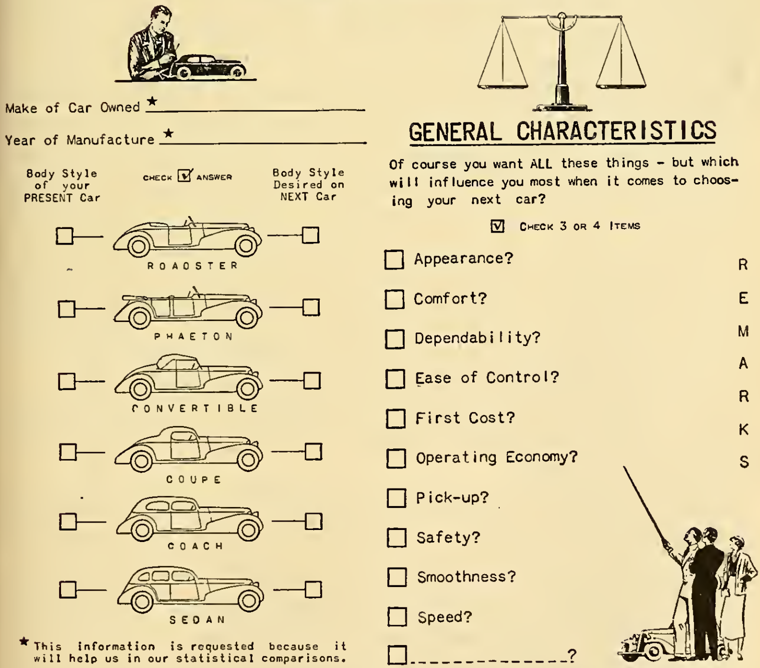
What appeals should be used? This problem of the relative effectiveness of advertising appeals is important. There are literally enormous differences in the effectiveness of the various advertisements in any given series or campaign. Take for instance, the following actual cases:

Of a series of eight advertisements of a book sold directly by mail, the best advertisement sold three times as many copies as the poorest one, differences in seasons and mediums being considered.

Of eight advertisements for a calculating machine, the best one brought 380 replies and the poorest brought 92.

MAKE IT SNAPPY, HOUND! HERE'S NIGHT COMING ON, AND OUR LUNCH GONE!
FOREST OF CUSTOMER PSYCHOLOGY
MANUFACTURER
SNIFF - SNIFF - SNIFF -
RESEARCH
BLISS

"Find out in advance just what styles, types, etc., of products customers want and need the most."



Make of Car Owned ★ ____________________

Year of Manufacture ★ ____________________

Body Style of your PRESENT Car	CHECK ☑ ANSWER	Body Style Desired on NEXT Car
☐	ROADSTER	☐
☐	PHAETON	☐
☐	CONVERTIBLE	☐
☐	COUPE	☐
☐	COACH	☐
☐	SEDAN	☐

★ This information is requested because it will help us in our statistical comparisons.

GENERAL CHARACTERISTICS

Of course you want ALL these things - but which will influence you most when it comes to choosing your next car?

☑ CHECK 3 OR 4 ITEMS

- ☐ Appearance?
- ☐ Comfort?
- ☐ Dependability?
- ☐ Ease of Control?
- ☐ First Cost?
- ☐ Operating Economy?
- ☐ Pick-up?
- ☐ Safety?
- ☐ Smoothness?
- ☐ Speed?
- ☐ ______________?

REMARKS

Fig. 53. General Motors illustrates what it means by consumer research, and two of this company's questionnaires illustrate the simple technique.

Of a series of seven insurance advertisements, the best one sold three times as much insurance as the poorest.

The considerable research work which has been done on this problem of the relative effectiveness of appeals has satisfactorily demonstrated that the strongest appeals can be ascertained with considerable reliability.

For example, Starch's surveys carried on over several years have rated the relative effectiveness of all the advertisements in fourteen leading national magazines. The advertisements are ranked in order of their relative cost for each person who: (1) sees the advertisement; (2) reads some of it; (3) reads most of it. They show, generally, that the 10 per cent of the advertisements which rank at the top in attention-value are seen by about eight times as many persons as see the 10 per cent which rank at the bottom. These data are gathered by a force of field interviewers who operate from the principal cities of the country. Advertisers, advertising agencies, and magazines who study these results are thus able to see how individual advertisements rate among readers in comparison with other advertisements in the same magazine and in other magazines. Similarly, this method shows the comparative costs of inquiries received from the same advertisement run in different magazines.

In the advertising appeals found most effective, it is fundamental that the general appeals of appetite, sex attraction, possession, and so on, are more powerful than the specific appeals of the product; in other words, it is more effective to advertise the health which an electric refrigerator will mean to a home than to advertise the color of the enamels it uses or its type of machinery. People are most interested in how goods affect their self-interests. The relative strength of appeals is discussed in Chapter II.

One method of determining the effectiveness of appeals is to try in a limited way one or more advertisements in which a particular appeal is used.

Relative merits of positive and negative appeals have bothered advertisers for some years. A positive appeal is directed toward the attainment of something which is desirable: "Consider the Value of Long Life." A negative appeal aims toward the avoidance of a repulsive or annoying situation; it is often called "scare copy." Such an example is the headline: "Beware of Cancer." Tests and investigations of various kinds have not shown that either type of appeal is generally superior to the other.

How should the appeals be presented? After it has been decided which appeals are most effective in the merchandising of a product, the problem arises of how these appeals may be presented. This problem gives rise to the many details regarding the technical preparation and execution of advertising. The five functions of an advertisement are: (1) to secure attention; (2) to arouse interest; (3) to bring about conviction; (4) to produce action; (5) to impress the memory.

Suggestive form of advertising. Before these five functions of an advertisement may be considered specifically, there is the fundamental problem of whether a given appeal should be presented primarily in argumentative or in suggestive form, or to what extent by a combination of the two methods. Thus, the appeal of nourishing food value may be presented primarily in textual, argumentative form, by discussing and presenting facts, such as the comparative food value as determined by scientific tests and expressed in terms of calories or other units. On the other hand, the appeal of high nutritive value might be presented primarily by means of the illustrative, suggestive form, by showing the picture of a healthy, active person enjoying himself in outdoor activities, or eating the food with apparent delight. The difference between these two methods of presentation is represented by the colloquial phrases, "reason why" copy and "pictorial" copy.

There are four kinds of suggestive advertisements, according to the degree of definiteness of the suggestion. The most extreme form of suggestive copy consists of a simple presentation of the name without comments of any sort. The second type suggests quality by elegant surroundings. For example, certain motor car advertising gives merely the name of the automobile and surroundings of expensive residences and expensively gowned women. The third type not only gives the name and presents the commodity in attractive surroundings, but it also shows the article in actual use, and thus suggests its value and desirability. The psychological strength of this type of advertising lies in its potent appeal to the imitative tendency in human nature. The fourth type takes the final step by giving a definite suggestion or command to use the article or to do a definite act toward obtaining it.

Suggestive copy aims to impress the name and to surround it with an atmosphere of worth and desirability. The repetition of the name and the display of the commodity in various advertisements will ultimately translate *impression* into *expression*, and the reader will buy what he has been reading about.

Argumentative advertising. In the making of a purchase, the buyer generally goes through a series of mental processes somewhat as follows: (1) He recognizes the desirability of, or the need of, that kind of article; (2) he compares competing brands; (3) he considers the means of securing the article; (4) he makes the final decision.

Since the purpose of argumentative advertising, as distinguished from suggestive advertising, is to produce action by persuasion instead of by suggestion, it is pertinent to ask: How may an advertisement be made convincing? Most convincing advertisements are marked by the four following characteristics: (1) they have a strong selling point or points; (2) they are specific rather than general in the statement of facts or events; (3) their statements are relevant and to the point, avoiding far-fetched, uninteresting analogies; (4) their statements give the impression of being absolutely true; they avoid exaggeration and over-statement.

In the writing of the best argumentative copy, words and phrases are used which arouse concrete mental images in the minds of the readers. For articles which appeal primarily to a certain sense, these words and phrases emphasize the images of that particular sense. For example, descriptions of food arouse taste images; descriptions of musical images call up sound pictures. Advertisements of clothing make strong points of appearance and style. Each advertisement appeals to the sense or senses to which the commodity itself appeals. In salesmanship through print, the advertisement must stimulate the customer's imagination so that in his mind he can see, hear, touch, taste, or smell the article.

Truthfulness in advertising. Honesty is the foundation of confidence, so that for readers to be persuaded by advertising they must be convinced that it is truthful. Perhaps 97 per cent of all advertising is fundamentally truthful and dependable. In 1935, a survey of 5,000 persons in the United States was reported by Charles A. Stech, in which it appeared that 85 per cent of these persons considered the statements made in daily newspaper advertising more reliable than those of the men elected to public office. More confidence, too, was placed in such advertising than in the statements of salesmen.

Perhaps the greatest fault of advertising in this matter of truthfulness is exaggeration. The use of the superlative is altogether too prevalent. "The finest," "the best," "the greatest," "the most economical," and so on, are flung at the public from every source.

Other matters on which advertising must be careful if it is to be truthful and convincing are quotations of comparative prices, especially when they are not true comparisons; misleading tradenames, misleading labels, misuse of testimonials, and pseudoscientific evidence.

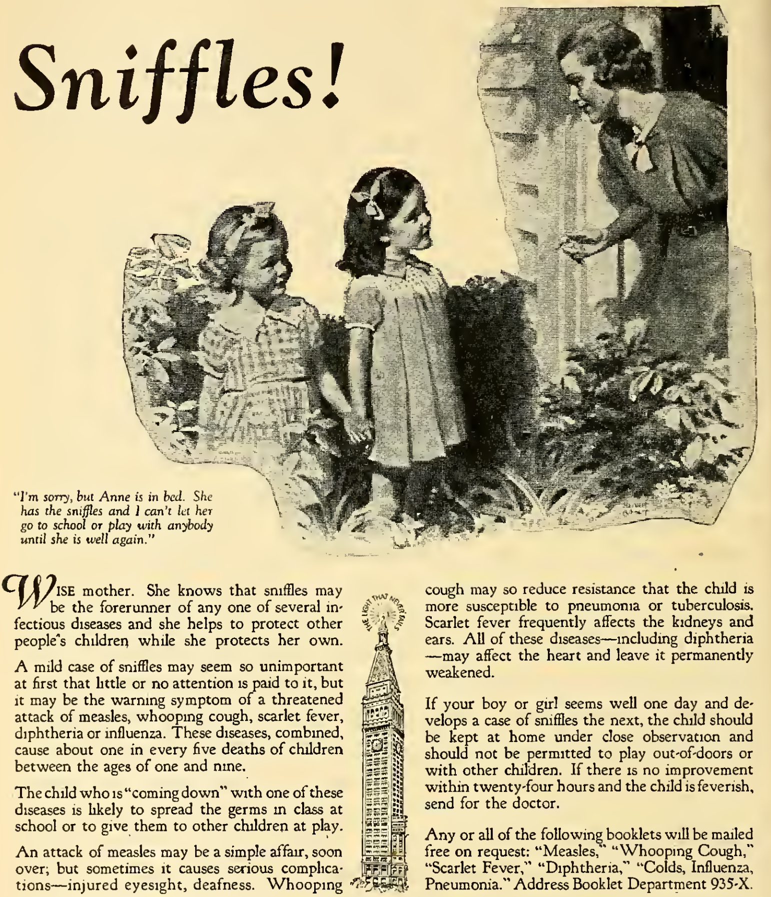
Headlines. Headlines are more important in securing interest than in producing desire, conviction, or belief. But they are the most important words in an advertisement because they are the only part of an advertisement which most readers ever catch. There are two aspects to a headline, its mechanical aspect or its type and arrangement, and its meaning aspect, or the content of its statement.

The type should be large enough to set it off and secure the attention of the reader. It should have as few words as possible, so that it may be read as quickly as possible. Type and arrangement of words should make the reading as easy as possible. The headline should be located where it will be seen to best advantage.

The best length for a headline is one which permits it to be read at a glance. This is generally five or six words. The basis of this law is the fact that the grasp of the attention is limited, a fact which holds not only for visual impressions, but also for auditory and tactual impressions. Thus, in a rapid succession of sounds no more than five or six can be recognized at a single impression.

The meaning aspects or the contents of headlines are equally important. They should be relevant rather than blind. They should state the vital or central point of the advertisement. They should be truthful, sincere, and believable. They should be easy to grasp, unless otherwise sufficiently interesting to hold the reader's interest so that he will find out what it is about.

Interest may always be stimulated by appealing to some fundamental human need or interest. The desirability of having "human interest" in advertising copy is important not only for the headline but also for the advertisement as a whole. A human interest type of advertisement is illustrated in Fig. 54. Psychologically, this simply means an appeal to the deep-seated human desires and motives, such as curiosity, personal pride and ambition, social distinction, economy, comfort, pleasure, and so on. The interrogatory form of heading tends to arouse curiosity.



THE LIGHT THAT NEVER FAILS

Sniffles!

"I'm sorry, but Anne is in bed. She has the sniffles and I can't let her go to school or play with anybody until she is well again."

WISE mother. She knows that sniffles may be the forerunner of any one of several infectious diseases and she helps to protect other people's children while she protects her own.

A mild case of sniffles may seem so unimportant at first that little or no attention is paid to it, but it may be the warning symptom of a threatened attack of measles, whooping cough, scarlet fever, diphtheria or influenza. These diseases, combined, cause about one in every five deaths of children between the ages of one and nine.

The child who is "coming down" with one of these diseases is likely to spread the germs in class at school or to give them to other children at play.

An attack of measles may be a simple affair, soon over; but sometimes it causes serious complications—injured eyesight, deafness. Whooping cough may so reduce resistance that the child is more susceptible to pneumonia or tuberculosis. Scarlet fever frequently affects the kidneys and ears. All of these diseases—including diphtheria—may affect the heart and leave it permanently weakened.

If your boy or girl seems well one day and develops a case of sniffles the next, the child should be kept at home under close observation and should not be permitted to play out-of-doors or with other children. If there is no improvement within twenty-four hours and the child is feverish, send for the doctor.

Any or all of the following booklets will be mailed free on request: "Measles," "Whooping Cough," "Scarlet Fever," "Diphtheria," "Colds, Influenza, Pneumonia." Address Booklet Department 935-X.

METROPOLITAN LIFE INSURANCE COMPANY

FREDERICK H. ECKER, PRESIDENT

ONE MADISON AVE., NEW YORK, N.Y.

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FIG. 54. An example of how the Metropolitan Life Insurance Company gets human interest into its advertising.

Catch phrases such as "Chesterfields, They Satisfy," are elements in advertising which are closely related to headlines. They are designed to impress upon people's minds some significant point about a commodity or proposition. Psychologically, they are simply an aid to memory.

Illustrations. Perhaps no maxim is more commonly used in advertising parlance than "One picture is worth a thousand words." Certainly, pictures play a highly important part in conveying ideas. They probably increase the attention value of the average advertisement by 50 per cent.

Illustrations have three primary purposes: (1) to attract attention; (2) to make the advertisement easier to comprehend by portraying the article or illustrating some relevant point; (3) to make the advertisement artistically attractive to look at. The portrayal of action in an illustration heightens the interest and vividness. An object in action appeals more to our interest than the same object in a stable, inactive condition. Photographs are generally more convincing than drawings or paintings, but they are not ordinarily so vigorous or so suitable for creating atmosphere.

Securing Attention

Size of advertisements. The problem of the size of advertisements and their frequency of insertion is important from the point of view of the economic expenditure of a given advertising appropriation.

An investigation made by Starch more than a dozen years ago, but borne out by his continuous research into advertising effectiveness since, shows that a one-half page, instead of having 50 per cent of the attention value of a full page, has only 35 per cent; a quarter-page, instead of having 25 per cent of the attention value of a full page, has only 15 per cent. On the other hand, the double-page advertisement, instead of having 200 per cent, or twice the attention value of the full page, has only 158 per cent of the attention value of the full page. He also found that color pages were recalled 94 per cent more frequently and recognized 84 per cent more frequently than the black and white pages. Some psychologists say that attention value varies as the square root of the space: If a quarter-page advertisement is seen by 100 out of 1,000 readers, the same advertisement occupying a full page would be seen by 200 rather than 400.

Extensive experimental work has shown that the rate of learning and the rate of forgetting follow certain fairly definite laws, the significant part of which is that the rate of forgetting is much more rapid at the beginning. This fact is considered in planning the frequency of insertions when a product is first being advertised. To counteract the rapid rate of forgetting, the insertions or repetitions should come much more frequently at the beginning than later.

The general conclusion which advertising men have drawn from their experience and from the experimental studies made is that, other things being equal, for display advertising where the attention of the reader must be attracted, large space used less frequently is more effective than small space used more frequently.

Color. A Gloucester fish merchant, selling by direct mail, increased his returns a third merely by adding color to his circulars. However, color increases cost of advertising considerably, so advertisers must be cautious before they use it. There is no safe measure of the extent to which use of color increases the effectiveness of advertisements. Color may increase sales value from 25 to 1,500 per cent, depending upon such factors as the product, medium, and type of readers.

Next to black, red is the most frequently used color in advertisements in which the color is not determined by the natural color of the object illustrated.

Layout and typography. Careful attention to layout and typography are also essential in securing attention for an advertising message. For our purposes, a "layout" may be considered to be the arrangement, features, and typography of the finished advertisement. An effective layout also helps to convey the message easily and effectively, so that it may be read and grasped with the least effort.

The psychological principles which underlie the conditions of attracting attention are substantially the same whether they apply to attracting attention to advertisements or to any other feature in our environment. They may be divided into two types: (1) mechanical, external, or objective factors; (2) mental, internal, or subjective factors.

Among mechanical factors to be considered are size of type to be used, number of objects in layout to be emphasized, and the matter of position and contrast between the features of the layout.

The attention value of display type is generally directly proportional to the size of the type, except that smaller types are noticed perhaps more frequently than their sizes would lead one to expect, and that the attention value of larger sizes tends to increase somewhat more rapidly than the size.

A second principle is that, generally, the smaller the number of objects or features in the layout of an advertisement, the greater are the chances that any given object will attract attention. The application of this principle to layout is that generally an advertisement should contain one, and preferably only one, conspicuous feature, which should stand out prominently above the other features as an agency for catching the attention.

It is a well-known psychological law that objects in motion tend to attract the attention more readily than objects at rest. In an advertising layout suggested movement or action in a picture will tend to have a higher degree of attention value than static pictures and illustrations.

The principle of contrast is also important. This law states that, other things being equal, the duration and degree of attention depend upon the contrast of an object with surrounding objects. A derby among straw hats compels attention. Some of the devices based upon the law of contrast which are in common use in advertising are: black, gray, or colored backgrounds; large amounts of vacant white space; odd shapes, circles, ovals, curves, diagonal lines; bizarre type; unusual illustrations, diagonal or inverted position of illustrations; odd borders; unusual arrangement of type and words.

Mental factors in layouts. The well-constructed, artistic advertisement attracts and interests in a way that the poorly constructed one is unable to do. The intelligent advertiser studies the principles and effects of correct artistic arrangements as thoroughly as the painter or the architect.

The chief types of forms and outlines are the square, the circle, the oval, the double square, the sides of which are 1 to 2, and the "golden section," or rectangle, the proportions of which are approximately 5 to 8. The latter is generally considered to be the most pleasing rectangular form.

Balance. In order to be pleasing, an advertisement should be *balanced*, that is, its parts and features should be arranged to give the appearance of symmetry and stability. An advertisement is balanced when it is not top-heavy, lopsided, irregular, or unsymmetrical in the location of its features.

Through what mediums should the appeals or advertisements be presented? The medium is the object which carries an advertisement; it is the agency by which the advertisement is brought to the reader. The principal mediums are newspapers, magazines (in which are included trade, technical, farm, specialized, and general magazines), outdoor advertising, car cards, direct-mail advertising, dealer displays, and radio broadcasting.

Proper placing of advertisements in appropriate mediums is as important as study of the potential market and preparation of effective advertising.

For example, *Vogue* is a better medium for the advertising of expensive Paris gowns than is the *Saturday Evening Post*, because the former appeals to a class of theoretically well-to-do persons who can afford such raiment, whereas the 2,800,000 circulation of the *Post* includes a much wider range of Americans.

How to reach the desired audience entails other considerations in different mediums. With newspapers, such as large metropolitan journals, it often consists not so much in selecting the newspapers as in selecting the part of the newspaper in which to place the advertisement. An advertisement offering for sale stocks and bonds naturally belongs in the financial section; one offering sporting goods would be most effective near the sports section. In the matter of radio, it is important to ascertain the time of day when the audience desired is apt to be listening. Programs appealing to the housewife go on in the morning; children's programs late in the afternoon; programs of more general appeal at night when from 8 to 10 P.M. the greatest number of sets are tuned in.

Position of an advertisement in a medium has a great deal to do with its effectiveness. In magazines, advertising placed at or near the front or back of the book has greater attention-value than advertising farther toward the middle. As far as position on the page is concerned, the upper section has more attention-value, and as to right-hand and left-hand pages, there seems to be no appreciable difference in attention-value.

The general tone of a periodical is also important. Humorous publications often carry light or humorous advertising, because advertisers wish to capitalize on a sympathetic attitude in their readers.

Radio advertising appeals to the ear rather than to the eye. This permits the teaching of the pronunciation of trade names, for example. Psychology is unusually important in broadcasts, as the personality of radio performers makes a direct appeal to listeners.

Advertising, then, is largely a matter of psychology, whether it be in the preparation and placing of the advertisement, or in the market analysis which goes before the advertising and testing of advertising effectiveness which comes afterward. Of all, it is the form of influencing human behavior which is perhaps most familiar to us.

Questions for Yourself:

1. Do the advertisements which you notice in the magazines and newspapers you read appeal generally to the self-interests of readers or do they tell about the desirable features of the products advertised?
2. Why does some advertising fail to convince you?
3. Take the last magazine you read and turn the pages, asking yourself which advertisements you remember seeing, which you read only slightly, which you read all through. This will measure roughly the effectiveness of that magazine's advertising as far as you are concerned.
4. Try to remember how many of the products which you use, such as dentifrices, fountain pens, clothing, cereals, were introduced to you by advertising, and try to gauge how much your use of them is affected by advertising.

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CHAPTER XXIII

CONTROLLING BEHAVIOR THROUGH PUBLIC SPEECH

A common motive rooted in human wants is to behave so that our activities will be praisefully bespoken in public and our utterances have weight and power. We have but to think of ourselves as listeners to realize how much our own behavior is influenced by what we hear and to understand the value of public speech as a psychological tool for controlling the behavior of others.

Before the printing press was invented, speech was the common means of communication. If words were remembered they were transmitted to others. Thus ideas and thoughts contained in a speech, poem, or discourse could spread by word of mouth.

With the advent of the printing press the voice was supplemented or replaced by symbols comprehended through the eye. Mass communication became largely a matter of recorded words and printed pages became the best medium to influence people. During the past half-century or more there was a marked decrease in the use of oral language with corresponding deterioration in the art of speech. Literature rose as speech was considered merely as a convenience. Education concerned itself with the teaching of reading and writing, but usually assumed that speech would be acquired well enough for practical use without formal teaching. The last decade, however, brought the rise of radio and the consequent return of speech as a leading means of communication, especially of mass communication.

Communication through Speech

Fortunately for most of us, we can use both visual and aural avenues of communication. In this chapter we shall discuss communication through public speech whereby we seek to control the behavior of others, and shall consider visual means only when they supplement speech.

Naturally the audience will need to be considered, since the more knowledge you have about that which you wish to control or direct, the greater will be your chance for success, if you should be the speaker. Knowing something about the psychology of the audience may make it possible for you to understand your own behavior, if you should be the listener. Knowledge can be made to work two or more ways if you but have the insight and ability to make it do so.

Speech, as you know, develops as vocalization of the infant is specialized into specific sounds which gradually assume meaning and develop into language for better communication with others. A sound can attract the attention of someone, but in order to make that attention produce wanted activity the sound must have like meaning for both speaker and listener. This common understanding, through a common language, is essential before speech can become an effective means of controlling behavior.

Before the invention of graphic language and tools for the transmission and reception of vocal sounds beyond the face-to-face situation, the voice was the primary means of communication. Gesture, then as now, was a help and sometimes served as the only means of communication when a common language was lacking. But gesture in its broadest meaning serves man best as an aid to speech, and that only where vision is possible. It is well to remember that in all face-to-face situations the voice is rarely listened to as though completely separated from the person speaking. If the speaker is visible, his appearance, dress, posture, and mannerisms are certain to enhance or depreciate the influence of his speech.

Aside from these extraneous factors, however, the sound of the voice itself is important as a determinant of the effectiveness of speech. The voice is considered an index of the personality of the speaker and it often reveals more about his qualities than do appearance and action. A harsh, strident voice gives an unpleasant impression which is readily associated with the speaker as though it revealed a quality of his personality. Likewise a well-modulated, pleasant voice predisposes the listener to believe that the speaker is a pleasant person who knows whereof he speaks.

One learns, too, to recognize certain inflections of the voice as denoting anger, fear, love, or some other emotional reaction. If we know the speaker well we can tell a great deal about him from his voice which would not be noted by a stranger. But aside from intimate knowledge, we usually associate loud and raucous voices with angry persons, trembling and faint voices with fearful or timid persons, unctious or wheedling voices with those who wish to mollify or coax us.

Certain essential elements of voice are innate or dependent upon development, but the voice is amenable to training to a much greater extent than we seem to realize. A good speaking voice is an asset in business and social contacts as well as in the more formalized situations of public speaking. Even good ideas are ignored if the voice of the speaker shows faulty speech habits which cause amusement or resentment in the listener. Thus control of your own vocal mechanism is an excellent as well as essential first step toward control of other people.

Enunciation, pronunciation, and diction are other aspects of speech which combine with pleasant or unpleasant qualities of voice to determine its effectiveness as a tool. Pitch, timbre, intensity, and resonance are important aspects of speech, but the clearness with which words are spoken, the accuracy with which they are pronounced, and the appropriateness with which they are chosen are even more important in transferring your idea to another person. Mumbled, slovenly, poorly articulated speech makes the listener think of an uncertain, poorly informed, or ineffective personality.

Language is the attempt to change ideas into sound so that another may thereby know whereof we think. It may later be recorded in various graphic ways, but its origin remains essentially the attempt of one individual to communicate with another by means of meaningful sounds. The language pattern is learned from standards set by the spoken rather than the written word. It may consist of a very limited number of words strung together in loose and poorly constructed phrases and sentences, or it may be complex, beautifully formed, and integrated into a flexible and effective means of communication. An individual may learn many language patterns and thus be able to communicate with people of many language cultures, or he may limit himself to one which is understood only by the limited group with which he lives.

The person who uses words to influence the behavior of others must know in some measure the language abilities of his hearers in order to meet them on familiar ground. This is a truism we all recognize as valid, yet frequently disregard.

Slang and colloquialisms may be picturesque and interesting in themselves but their communication value is limited to the group and to those who have learned their meaning. Too great reliance on slang and localized language habits indicates a poverty of ideas so frequently that one suspects such poverty whenever slang is used too freely. Slangful and stereotyped phrases may conceal cleverness as well as vacuity, but the listener is not likely to grant the benefit of the doubt. Profanity too gives an impression of mental poverty which may affect your hearers quite differently from what you actually intended. The speaker who relies upon any or all of these language idiosyncracies is demonstrating a lack of control of his communication medium which is apt to influence the effect his speech may have upon his audience. These idiosyncracies may have their place in public speech when wisely controlled and used as embellishments or aids to picturesqueness or interest but they have little value as substitutes for fundamental language elements.

Sentence structure determines in large measure the effectiveness of a talk. Not only is common language essential, but the words used must be arranged in such manner as to present the ideas clearly and in proper relation to each other. Long, involved sentences do not do this effectively, either in spoken or in written language. The comparatively short sentences which present only as many concepts as can be readily grasped by the listener are most effective. Sentences averaging from 25 to 50 words have proved to be best attended to by both listener and reader. For the spoken sentence the shorter length is better, although it may be a little more difficult to weld into a smoothly progressing style. Spoken sentences may be looser in construction and less periodic than the written sentence. Some speakers attempt to maintain continuity of thought by too plentiful use of connecting words, or meaningless grunts and noises.

Thus in public speech the sentences most effective in making your listener think as you wish are well constructed and short rather than long; they present the idea clearly without ambiguity; and they march along steadily and easily, so that your audience will naturally and willingly march with you toward the goal you set.

The idea which you wish to objectify in sound or symbol should be your central concern. If the idea is nebulous and unformed, you will find difficulty in conveying it to your audience. Even the most musical voice and best constructed short sentences cannot long keep uncertainty or vagueness of ideas on your part from your hearers. Sound, clean-cut, and well-organized ideas can sometimes survive a bad voice and poor syntax, but a wise speaker will not jeopardize his message by crude delivery.

A knowledge of your audience will be of value also to help you know what ideas will be of interest. Timely ideas, close to the needs and desires of your listeners, will focus their attention and influence their behavior much more readily than will those far removed from their lives.

Psychological Aspects of Public Speech

The psychological functions involved in making a speech intended to influence or control the behavior of others are similar to those functions involved in salesmanship or advertising. Effective speech must initiate an attentive attitude in the listener; must stimulate and maintain his interest; create an impression or conviction; stimulate the listener to activity necessary to produce the desired response; and its essential elements must be remembered with sufficient clarity to suggest future behavior. All of these aspects may not confront the speaker with equal intensity or importance at any one time. The speaker-subject-audience situation is always different each time it occurs. The steps which compel attention and interest may need the expenditure of little effort on the part of the speaker, but those which produce the impression or conviction may require much. Or perhaps the hearers are ready to act and need only to have their activities directed toward the desired response.

The attentive attitude on the part of his audience is the first concern of any speaker. If he cannot focus the attention of his hearers upon himself and what he is saying, he has little opportunity to interest, convince, or influence them. The attention-compelling devices may be either mechanical stimulation of some sense organ, or more subtle devices which lead toward stimulation and maintenance of interest. It is easier to compel attention through some sensory avenue not already occupied with stimuli. For example, raising the hand or some other interesting activity often will quiet the members of a noisy group more readily than raising the voice. Their ears are already occupied with sound, but their eyes are relatively free to catch interesting movements. If the eyes of the audience cannot function thus, a like effect can be secured by varying the quality and kind of stimuli rather than only the intensity. A pleasantly sounding gong or chimes will attract attention more effectively than a loud voice. Rich strains of music precede the voice of the announcer urging the listener to think, act, or behave in a specified way.

Maps, charts, and apparatus may help attract and focus attention, but if too many are used they produce confusion rather than concentration. The amount of material which can be attended to at one time should be your guide in arranging visual aids. One clear chart well presented and closely attended to is usually more effective than a dozen indifferently seen.

Elevating yourself on a box or platform tends to make the group notice you. It helps to "polarize" or organize the audience toward a common point. The spotlight, moving curtain, reading lamp, or pulpit all serve to direct the attention of the audience toward the speaker. This concentration of attention is the first step toward unifying a group into an attentive audience.

Various experiments have been made to determine the best seating arrangement in classrooms and auditoriums. Seating people fairly close together and facing toward a common center encourage group solidarity as well as attentiveness. Those seated near the front, although presumably more disposed by greater interest to be attentive, may be distracted by details of dress, mannerisms, and so on, of the speaker. Those seated near the edge of the group, sides as well as back, and even on the aisles, feel less a part of the group and hence are more susceptible to distractions of attention. Darkening the auditorium tends to minimize the separations and weld the group, but it does not give the same unity to a scattered group that it does to a closely seated one.

To summarize, if you want your audience to attend to what you are saying, minimize the distracting and irrelevant bids for attention. Also make it easy for them to attend by having the physical factors of seating, lighting, ventilation, and heat as comfortable and unobtrusive as possible. This holds true throughout your talk. The attentive attitude not only needs to be initiated, but maintained. The speech which holds the attention of the larger part of the audience to the end is more apt to exert a directing influence than one which sags in the middle and dwindles away in ineffective words to which no one attends. Your audience must not only begin to listen but must continue to listen if you are to influence their thinking and behavior. This sustained, attentive attitude can be best assured through the subject matter you present in your talk.

Stimulating and maintaining interest is the second important psychological task of effective public speech. Through the medium of your subject matter you secure effective rapport with your audience. There are various aids such as personal prestige, clever building up of interest in your subject by the person who introduces you, dramatic stage setting, special ritual and ceremony, suggestive regalia, and so on, but these aids at best can exert only temporary and superficial influence in keeping your audience interested. You may be sure that the interests of your hearers lie close to their own needs, desires, motives, beliefs or attitudes, quite as definitely as yours do. If you can convince them that your interests and theirs meet on common ground, they will listen to you more readily. A close relation between the ideas set forth in the speech and the needs of the listeners usually assures attention and interest, unless the organization and delivery are too badly bungled.

Emotional aspects of behavior are also important in arousing and maintaining interest. Emotional reactions may be influential in determining the efficacy of any of the psychological tasks. Flags and pennants displayed on the platform serve a broader purpose than to catch the eye. They stimulate feelings of pride in country or class apart from any intellectual appreciation of worth. Speech which stirs the listener to anger, fear, hate, love, sympathy, or any variations in emotional interplay, will influence his behavior more effectively and quickly than will intellectual appeal alone.

The emotional appeals can be so strong that they cloud the intellectual factors and make false logic appear reasonable. This is particularly true when the speaker has been able to weld his group into a unified whole eager to follow his suggestions. As part of the group the individual is more susceptible to suggestion from both speaker and individuals near him. He feels increased power and security in numbers as he shifts responsibility from his own to the collective shoulders of the crowd. As an individual he may feel weak and responsible, but in a crowd he is strong and irresponsible. In a crowd he merges control of his energies with that of others, and subscribes to the belief that "might makes right." He becomes less fearful of consequences, will laugh and cheer or weep more easily, will follow suggestions of a leader more readily. This is an emotional phenomenon, not an intellectual one. The public speaker knows this, and therefore will strive to direct the emotions of his hearers toward the desired response.

Creating an impression or conviction is the aim of the speaker as he manipulates perceptions, interests, and emotions of his audience. The speech must be designed and delivered in such a manner that it will convince the hearers that certain things are desirable, necessary, or true and therefore must be done or encouraged; or that they are undesirable and detrimental to their personal security and must be changed, prevented, or destroyed.

The emotional appeals are of as great importance in shaping the impression and making it an effective stimulus to action as they are in forming interests. An emotionally aroused audience can be led to a conviction or belief even by faulty logic or rationalization. The sophisticated audience is especially prone to being swayed by the appearance of logical persuasion coupled with the clever use of emotional appeal by the speaker.

If the speaker can convince his hearers that a certain course of action will add to their prestige, will make them more skillful than others, will give them power, he can then direct their behavior more easily. Varied arguments, touching the needs, desires, and motives of the listener at as many points as possible, tend to promote belief. Skillful repetition will fix the impressions into the definite conviction which can be used in producing the wanted response.

Producing the desired response is the logical next step in control which the speaker seeks to exercise over the behavior of others. The audience may be attentive, interested, and convinced that a certain course of action is necessary or desirable, but it has yet to act in the way the speaker intends. The speech or program must be crystalized into a simple formula of behavior, because vague and generalized statements are too indefinite to be effective suggestions to action. The formula must be terse, specific, and easily remembered. A slogan or "battle-cry" helps a great deal, particularly if the response is to occur at some future time. Emphasizing the specific time and place is also good technique in producing the desired response.

The members of an audience will act more readily if they can feel assured others will act with them. The attitudes and visible expressions on the faces of those about them predispose the audience to act quite as much as do the activities of the leader. That is the reason it is easier to stir an audience to acts based on fear, anger, and hate, which have more easily seen physical expressions, than to altruistic acts, rooted in the less readily indicated and recognized sentiments and emotions of sympathy and love.

Controlling and directing behavior of as many of the individuals in his audience as possible is the aim of practically every public speaker. The audience is always an aggregate of individual people and no matter how closely knit these people may be in their reactions, they act as individuals. The "mind of the audience" is a myth which never actually exists. The individuals making up the audience may react similarly to the stimuli presented to them, they may even behave differently in the group than when alone; but, in the final analysis, they remain individual minds which the speaker seeks to direct.

Leading his listeners to do as he wishes through persuasion and suggestion is sound psychological procedure if their self-regard is maintained. Much as people desire to follow the secure path surveyed and laid out for them by others, they wish to feel that they are free agents in following it. They usually can be led more successfully than bullied or forced. A speaker who antagonizes his audience or displays a belligerent attitude toward them engenders resentment or fear, neither of which will encourage the listener to follow his suggestions. Even though the course may seem wise and profitable, the audience rarely will follow the advice of a speaker who antagonizes them.

Ridicule, sarcasm, and caustic wit also tend to make an audience uncomfortable and prone to withdraw from the speaker. Good humor with which they can identify themselves draws the members of an audience together as well as toward the speaker.

Fear of the audience is a common reaction which the speaker may need to control each time he steps before an audience. A little fear has a wholesome effect when it puts the speaker on his toes, so to speak, and makes him produce his best efforts to propitiate his hearers. Paralyzing stage fright is another matter, however, for then the fear indicates complete lack of self-control on the part of the performer. Since a frightened speaker is seldom convincing, it may be well to know how to avoid or overcome stage fright, on the chance that you will recall what to do in similar circumstances.

Because fright comes from lack of control, it is easy to see that securing control over your own behavior is the keynote for managing this reaction. Suggestions for gaining control may take the following forms. Attend to that part of your performance which pleases you and gives you greatest assurance, or look for the friendly face in the audience, or repeat a prayer or perform a ritual that has served to sustain you in the past, do almost anything except give attention to your trembling knees, shaking hands or voice, or whatever form your fear may take.

If your audience is actually hostile, you can regain control of them more quickly by showing yourself to be calm and master of yourself. Fighting back only intensifies the hostility. If you can lean forward and quietly begin a friendly conversation with someone in the front row, it will not be long before those near will pause to listen. This circle will gradually widen to include enough to dominate the audience. Then bring forth your reserves and build up the favorable attitude, even at the expense of a temporary abandonment of the hostility-provoking factors in your speech. Or if you lack the ability to marshal a ready topic to engage those in front, just standing at ease, and smiling goodnaturedly at the group may quiet them gradually as they realize that they lack an opponent.

The Audience

It is possible to discuss from several points of view the types of audiences a speaker may encounter. For this chapter the following classification seems serviceable: the peripatetic group, the organized secular audience, the congregation, the unseen radio audience. Each may be of any age and sex, and each will present its own psychological problems to the speaker who tries to exert influence.

The peripatetic groups may meet here and there, on the street corner, any place where a few or many people may gather to hear what a speaker has to say. If you are addressing such an audience, your first psychological task will be to attract attention, after which you can proceed to as many of your other tasks as you wish or are permitted. This casual group will probably be swayed by emotional appeals more easily than by logic. Their wants will be simple and close to the self-preservative drives of food, shelter, and security.

The first step is to elevate yourself physically above your audience so that you may be seen and secure the prestige which elevation gives. In this position visual appeals can be added to auditory ones. A flag or pennant floating above your soapbox will help, since the associations connected with it will be assumed to belong also to you. Your language will need to be simple and direct and pitched to the educational level of the members of your group. Emotional appeals may serve to stir them to action, but maudlin sentimentality may be jeered with greater promptness than by a more polite group.

The peripatetic audience is the least organized and probably the most difficult to change or direct beyond the moment. Stump speeches delivered in the heat of the campaign may influence some to vote as the speaker directs, but assumptions of their effectiveness may be mere wishes and not facts. The charlatan and the demagogue may find such a group to his liking, for it often has among its members a large proportion of the ignorant, the discontented, and the gullible. The point emphasized is that the walking audience is not bound together by more than curiosity or passing interest. They present every psychological task for the speaker, if he would control their behavior beyond merely arresting their walk. The impression he makes must be made quickly with considerable emotional accompaniment.

The organized secular audience may vary from a few persons gathered together in assembly or classroom for discussion or instruction to large groups gathered to hear formal lectures.

This type of audience has some other reason than curiosity for getting together. They probably are curious about many things, of course, but they come for some additional reason even if it is only to secure credit for having attended the meeting. With this audience the speaker must concern himself not only with what he wishes to tell them but with what they may want from him.

The organized audience, just as any audience, will quickly recognize whether the speaker has command of himself and of his subject. They will be quick to recognize sham and pretense, and will make their resentment or indifference known, perhaps somewhat more politely than the peripatetic group, but none the less effectively.

The ineffectiveness of the speaker may be caused by the inadequacy of many factors: voice, delivery, mechanical accoutrements, prestige, preparation, self-control, and many others. He may not understand the psychological aspects of the situation or the techniques involved in creating and maintaining the right psychological atmosphere. The good speaker may have all these factors in his favor and yet be quite unaware of them.

Considerable investigation of the effectiveness of lectures has been made. While results vary with the investigation, the general conclusions seem to be that the lecture method is more successful for immediate than for delayed recall. To insure better delayed recall, the lecture must be supplemented by visual aids or by discussion. A lecturer can expect his hearers to retain about one-third of what he says. They will retain somewhat more of the lecture delivered without interference of notes or reading from manuscript. On the whole, the lecture method is not inferior to other methods of imparting knowledge. If special devices such as competent note-taking are added, it can be made effective to impart knowledge for delayed recall as well as for immediate recall.

The congregation has the unifying influence of religious beliefs which makes it different from secular groups. The church edifice, ritual, music, lighting, all tend to vary the problem of the speaker from those problems encountered with other audiences. Yet the same psychological aspects are important. The mechanical accoutrements, the setting, and the religious attitude of the worshipers make them readily suggestible and subject to direction. Therefore he who speaks to them has an excellent chance to control their behavior. If he uses this to help them formulate higher values for their seeking, or to chart the way of assurance and comfort, he is meeting the needs of his hearers. They will follow his suggestions confidently.

The quality of voice, words spoken, and sentences uttered must fit the expectations of the religious audience as well as carry the thoughts of the speaker to them in forthrightness and beauty. The majority will prefer the voice from the pulpit to be the voice of the shepherd leading them into paths of righteousness.

The unseen radio audience presents a phenomenon which is of such recent development that it seems definitely of today. Radio has extended the human voice to thousands and millions where but yesterday it could be heard only by tens and hundreds. What that extension of the human voice eventually may mean in direction and control of human thought and behavior we do not know.

The unseen audience of the radio speaker differs from any herein described. It may be one person, man, woman, or child, listening attentively or doing various tasks from reading to handwork. It may be several or many gathered together, some listening, some going about their affairs. The groups may be mixed as to age, sex, education, economic status, language. Even the reasons for tuning in are as varied as the people listening. Listeners who may be too polite to walk out as you are speaking to them in person have no such compunctions about dialing another station if your radio talk bores or displeases them.

You are limited in the mechanical aids you can employ to "warm up" your audience. Music may set the mood. The announcer can build up your prestige somewhat as the chairman introducing you in person might, but the burden of your effectiveness depends upon the tones and inflections of your voice and upon the ideas you present.

Your message will need to be given with organized and systematic dispatch; your sentences be varied in length but with a preponderance of those which are short and well within the span of perception; words well chosen to give the effect you wish. Experience has shown that the fifteen-minute speech is more effective than the half-hour speech. Certainly, the shorter speech will need better workmanship, which will aid its effectiveness.

Emotional appeals may be resorted to as in face-to-face speech, but they must be used with greater finesse or they will defeat their purpose by overuse. Too much emotionalism over the radio may sound ridiculous and insincere should a listener tune in after the preliminary parts of the speech are over, which might have prepared him for the emotion. A late-comer into an audience group may get cues from those about him and thus quickly get into rapport with the speaker, but one who tunes into the middle of a speech has no such cues.

The advertisers, who sponsor and pay a large proportion of our radio entertainers and speakers, have made various attempts to measure the effectiveness of this medium. Comparing the amount of sales due to radio advertising with the amount without radio advertising is one index of the effectiveness of the method. Mail response to the program has been examined as to its value in indicating success of the radio presentation. Consistent and direct relationship between popularity of program and sales is difficult to measure.

Measuring techniques as to the various psychological factors involved in listening are being developed. Lumley (1934) discussed a number of attempts to measure the accuracy of the memory of the audience in both reproduction and recognition of material presented. He also surveyed the effect of radio on audience attitude and judgments, and thus summarized his chapter on the psychological factors in listening.

> Memory experiments have shown that listeners do not accurately report many things heard over the radio. Whether the inaccuracy is greater than that in reporting what is read remains undecided. Audience attitudes are affected by radio programs, and several means of measuring changes are available. Listeners can judge the temperament, age, occupation, and background of a radio speaker from his voice (p. 206).

Speech must necessarily play a large part in radio broadcasting. Television, when perfected, no doubt will make the delivery of a radio talk more nearly like the ordinary lecture, but meantime the radio speech must wield what influence it can as a one-way avenue of communication through hearing. That this influence is affecting our beliefs, attitudes, and behavior is sure, however uncertain we may be as to its amount or specific effects. Cantril and Allport (1935) suggest the importance of radio in the formation of attitudes through propaganda.

> The type of propaganda, like the type of censorship, found in any particular country, depends upon who owns and controls the air. In Russia, radio propaganda is used to build up Communism; the Nazi propagandist, Goebbels, uses it ubiquitously to spread the doctrines of Hitler and says that "Some day the radio will be the spiritual daily bread of the whole German nation." In the United States most, but by no means all, propaganda is devoted to the selling of merchandise. Much is of the subtle, indirect, concealed variety issued in behalf of political, economic, or religious interests whose identity generally remains hidden. Commercial propaganda by contrast is usually frank and revealed. The average American listener accepts it as an inevitable daily experience. He realizes that if he gracefully submits he will receive free entertainment and beyond this point he worries not at all (pp. 59–60).

Public Speech and Propaganda

Although radio furnishes the most modern and dramatic avenue for the spread of propaganda, it must not be forgotten that any public speech can be made to serve the same purpose. The direct speech may compensate for smaller numbers by greater effectiveness arising from the face-to-face situation. The point emphasized here is that speech, in whatever manner it is delivered to the public, is a most important means for "effort directed systematically toward the gaining of public support for an opinion or a course of action" as propaganda is defined in its broader aspects.

The methods of the propagandists have been analyzed by Doob (1935). Some of his basic principles of propaganda have been restated by Cantril and Allport (1935) and illustrated by examples derived from American broadcasting. The principles as re-stated will be given here to guide your thinking and investigation, which may well begin with direct access to the references cited.

> 1. The propagandist tries whenever possible to connect his proposition to some preëxisting attitude, need, or symbol rich in meaning.
> 2. If no direct appeal can be made to an existing attitude or belief, then the propagandist builds up a new attitude by using indirect suggestion.
> 3. Except in rare instances, the propagandist avoids argument.
> 4. The propagandist uses repetition to overcome resistance.
> 5. Owing to their lack of experience and of critical ability, children are especially susceptible to propaganda (pp. 60–64).

Thus with both good and bad propaganda beating upon our ears with ever-increasing din, it is well for each of us better to understand public speech as a tool for control of behavior, so that we ourselves may wield it more skillfully when necessary and at other times react more intelligently to its use by others. The means whereby speech becomes a tool for control of behavior are embodied in the following summary of the psychological concomitants of public speech discussed in this chapter.

THE PSYCHOLOGY OF PUBLIC SPEECH SUMMARIZED

Public speech is concerned with an infinite number of factors from quality of voice to subject matter, from human needs to ambitions, from superstition to logic, from fact to fancy. Anything perceived by the human being may be looked upon as having a psychological bearing. However, only a few of the more general aspects can be summarized for emphasis.

The voice of pleasant quality, of clear sounds, and easy inflection is more effective in establishing rapport with the listener than the harsh, unpleasant, or monotonous voice.

The language must transmute the thought of the speaker into sounds readily understood by the listener. It should be picturesque but not at the sacrifice of either clarity or good taste.

Short, well-constructed sentences which state ideas with precision well within the span of perception are preferable to long sentences.

The ideas expressed must be well formulated and clear in the mind of the speaker before he can present them effectively to his listeners. The closer these ideas coincide with the beliefs of the audience, the more readily will the audience follow the suggestions made by them.

The emotional concomitants are of great importance in determining the influence a speech may have.

The psychological tasks a speaker must negotiate are comparable with those of the advertiser or salesman—attracting attention, securing and maintaining interest, creating conviction, producing the response, and controlling and directing the behavior of the individual.

The audience, although it may be welded by a convincing speaker into a unit, still is an aggregate of individual minds to be convinced and influenced. Individuals in a group will often behave as they would not behave without the feeling of power which being one of a group gives.

A little stage fright may be a wholesome thing to stimulate the speaker to give his best. Control it by attending to something else which can give you assurance, perhaps a simple act or repeating a prayer or formula that has helped you before.

A hostile audience can be turned into a friendly one by poised control and friendliness of attitude better than by fighting back. A few interested people can become a nucleus from which interest and good humor may radiate to the rest, or which can at least create an attentive attitude sufficient to give you an opportunity to bring forward your reserves.

The speaker who can arouse or enlist the needs, desires, beliefs, attitudes, and motives of his hearers can influence their behavior more easily than through impersonal and abstract ideas.

Numerous suggestions for effective public speaking based on sound psychological principles might be given here. Two suggestions, however, are of such broad basic value that they are listed below.

First, when you are faced with the task of making a speech or delivering an address, think through the occasion, the audience, and the subject so thoroughly that you feel strongly from the bottom of your convictions that you have a vital, moving message to convey. This may require a great deal of study, investigation, and particularly thinking. But unless you do feel strongly about the message you wish to convey, your speech will fall flat. Do not say to your audience that you have a message to convey. Let them gather that from the speech itself. The speaker who freely emphasizes that he has a message quite often does not have one.

Second, do not talk to the eyes and ears of your listeners. Talk to their inner selves. That means tell your ideas simply, directly, and forcefully, without shouting or swinging of arms, or strained effort at artificial, flowery language. Few persons today know that on November 19, 1863, when the Gettysburg battlefield was dedicated as a national cemetery, the address of the day was delivered by the famous orator, Edward Everett. Few today know this fact, and fewer still know what he said in his two-hour address. But everyone knows what Lincoln said in his never-to-be-forgotten two-minute address. He spoke simply, directly, and nobly, with a moving message from his soul to the souls of his listeners.

Questions for Yourself:

1. How does your language rate as a means of communicating your thoughts to others?
2. What are the good points about your speech? How can you improve them to make your speech more effective, or are they completely satisfactory as they are?
3. What is your most serious speech difficulty? Plan detailed procedure to eliminate or at least minimize the difficulty.
4. What does "freedom of speech" mean to you? What is its psychological rôle in controlling the behavior of some group you know well?

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CHAPTER XXIV

CONTROLLING THE BEHAVIOR OF OTHERS THROUGH MUSIC, ART, AND ENTERTAINMENT

The influence of music upon both animal and human behavior has been known for many centuries. Records of the influence upon human behavior consisted primarily of observations of emotional, spiritual, and physical reactions of individuals when some form of tonal and rhythmical combinations of sound was controlled by medicine men through magic or myth for the purposes of religion, war, and work.

Listening to music does something to many persons; it may stir them, or it may soothe them. Personal reproduction of music does something to the performer, whether he be amateur or artist; it may merely release energy, or it may banish reality. Creating music is known to do something to the composer; it may release emotional conflicts, or it may reveal to him unknown personal power and insight. When you are influenced or controlled by music as listener, reproducer, or creator, many psychological principles are operating. When you are influenced or controlled by color, motion, sculpture, or by any of the arts, similar psychological principles are operating. These experiences may be described and analyzed to some extent into sensory and perceptual reactions, into imaginative and affective responses, or into the inscrutable "inspirations" of a great art experience.

When does one have an art experience? Is merely seeing or hearing a great piece of art an art experience? Not long ago the famous "Stable Tree" in the Sequoias fell to the earth. Was there any sound when it fell if no one was near enough to hear it? Where was the sound? When you experience the beauty of a painting or an unusual sunset, where is the beauty? Is it in the painting or the sunset if you are not present to experience it? Is the beauty only an experience within you? Why does a certain combination of words in a poem, the sense of proportion, lines, and balance in a statue, the blend of colors in a painting, the sonance of tones in a symphony, prove to be great art experiences to someone at some time? It is thought that a great art experience does not result until seeing or hearing are accompanied by feeling something in the art object with which you may identify yourself. This art experience may be more lasting if it occurs during or soon after an expansive or oppressive form of activity, because you are mentally and emotionally "set" for something to affect you to a greater degree than usual.

There are beautiful sunsets over the ocean, experienced from an ocean liner or from the shore, but they cannot compare, shall we say, with the sunset experienced from Sunset Drive at Crater Lake, Oregon. The drive ascending to Crater Lake through the forest preserve of giant trees reduces your ego to a minute quantity, as ascending spiral curves reveal awe-inspiring glimpses of the expanse ahead, and the rim of Crater Lake itself permits you to look down a sheer thousand feet at the bluest, bottomless water you have ever seen. A new world has been revealed through a panorama of contrasting events. Then you drive away around the rim road to view the sunset. An indescribable plethora overcomes you! Something has happened within you. The memory of such a succession of episodal adventures rising to a superb climax has been prolonged, and no doubt enhanced, by imaginative recalls, charged with a high degree of pleasurable emotion. Such experiences are suggestive of genuine art experiences, the experience of beauty, or the esthetic experience.

The sculptor who can "catch" a mood and preserve it in marble so that it appeals to you; the painter who can express a thought that will be relived or will feed your imagination through succeeding moments of memory; the composer who has conveyed some feeling which lives through the multitudinous interpretations of many performers; these creators are artists. They have provided a medium of marble, color, and tone into which you can project yourself, and in which something is immediately associated with your past experiences or your future hopes; it "grips" you, "chills run up your spine," you are "transported to another world," you "lose yourself," you are inspired, you have escaped from problems and worries. Such are the experiential descriptions of some individuals at moments of intense emotional reactions. The art, music, and entertainment have influenced you in some way, they have controlled your behavior momentarily, and may prove to be a forceful influence over your subsequent behavior.

Psychology has not progressed very far in its search for the factors present in the relation between stimuli from sound, color, motion, and entertainment and the resultant behavior of individuals. The scientific and experimental approaches are gradually supplementing earlier observational methods. In this chapter we are not attempting to reveal the nature of esthetic experiences as such, we are especially concerned with the kind and degree of influence which the arts and entertainment have upon persons, the influence directed by an individual or group, and the influence undirected by man. The fact that drama, music, pictorial art, and so forth, continue their influences upon individuals can be realized by the great number of people who attend motion picture theaters. It is conservatively estimated by Dale (1933) that weekly attendance at motion picture theaters throughout the nation approximates 11,000,000 under fourteen years of age and 28,000,000 minors. In a group of theaters where attendance was checked over a period of three months, about 17 per cent of the audiences consisted of children under fourteen years of age, about 21 per cent from fourteen to twenty years of age, and 62 per cent over twenty-one years.

Controlling Behavior through Music and Other Arts

One who does creative work of any kind is known to experience a mental and emotional possession of himself by the particular medium of expression, whether it be writing, sculpturing, painting, or composing. Only when he himself masters this urge for expression does it become articulated and crystallized into an art form of some kind. This influence, at first undirected by the creative artist, but later directed into definite channels, is a psychological process of creative activity, the effect of which upon the artist himself may correspond in some degree to the effect of art upon the spectator and listener. The possession of self by an urge or motivation is aptly illustrated by the following examples.

Morgan (1930) in his discussion of the world transformed by art refers to an art master and a poet as follows:

> The art master was one of those who could dash off lightning sketches with admirable economy of line. "How do you manage," I asked, "to make all stand out solid with so few strokes of your pencil in the flat?" "I don't know," he replied, "that's where I feel so palpable a fraud as an art teacher. So far as I can make out one just goes on

> pounding away and wasting a lot of paper, and all is as flat as the paper itself. And then some fine day this and that begins to stand out. That is a great moment. A bit more practice—say a month or two with a few dozen sketches a day—and all comes right like this"; and he dashed off a dancing girl with a tambourine. . . .
>
> "She seems to be alive; she dances and shakes the tambourine. How do you manage that?" "That," he said, "requires much more expenditure of waste paper. You think it is coming? Good. Yes. I hope it is coming. And I can remember the very day when it began to come. But I can't always make it come. I wish I could. I still have to wait on my fingers to do the trick for me." . . .
>
> There seemed to be something lower than himself working with him to give the desired results (p. 216).

Another illustration, that of the poet, was a much later reminiscence.

> A young man came to me for the solution of a problem which pressed sorely upon him. "I'm a bit of a poet," he said, "write lyrics, and sonnets, prose phantasies, and so forth; have done so since I was a kid. They just come to me, not always, but now and then in glad moments of ecstasy. What I want to ask is: Where do I come in? Of course, in a sense it is I who do it—at any rate—spout it or write it down. But there's something at work in me or through me that is far greater than I am."
>
> Of my two young friends one emphasized something lower than himself in some way coöperating with him. The other emphasized somewhat higher than himself with which in some way he coöperated.
>
> The something lower than himself may be interpreted in terms of perceptive habit—development. . . . The somewhat higher than himself may be interpreted in terms of new and unexpected nuances of poetic "vision," co-related with "patterns" of higher brain centers within the cortex of the frontal lobes (p. 217).

Henry Cowell, an internationally known composer and music scholar, was nineteen years old in 1917 when Professor Lewis Terman of Stanford University was developing a record of the psychological aspects of his inborn genius pressing to victory against most adverse circumstances. He persuaded Cowell (1926) to give us a glimpse of his mind at work in creative activities. In portions of this account which follows, study the psychological factors and note the increasing degree of control which he obtains over his creative behavior. He refers to the composer's mind as the most perfect instrument in the world, and says,

> Every conceivable tone-quality and beauty of nuance, every harmony and disharmony, or any number of simultaneous melodies can

> be heard at will by the trained composer; he can hear not only the sound of any instrument or combination of instruments, but also an almost infinite number of sounds which cannot as yet be produced on any instrument (p. 234).

His opportunities to hear concerts were not sufficient to satisfy his craving for music between the ages of eight and fourteen, therefore he deliberately trained himself to rehearse mentally those compositions which he liked.

> No sooner did I begin this self-training than I had at times curious experiences of having glorious sounds leap unexpectedly into my mind—original melodies and complete harmonies such as I could not conjure forth at will, and exalted qualities of tone such as I have never heard nor before imagined. I had at first not the slightest control over what was being played in my mind at these times; I could not bring the music about at will, nor could I capture the material sufficiently to write it down. Perhaps these experiences constituted what is known as an "inspiration." . . . I was intensely curious concerning the experiences and strove constantly to gain some sort of control over them, and finally found that by an almost superhuman effort I could bring one of them about. . . . At first able to control only a note or two during a musical flow lasting perhaps half an hour, I became able, by constant attempt, to produce more and more readily whatever melodies and harmonies and tone-qualities I desired without altering the nature of the flow of sounds. . . .
>
> As soon as I could control which sounds I should hear, and turn on a flow of them at will, I was able by virtue of studying notations, to write down the thought, after going over it until it was thoroughly memorized. . . .
>
> I am able now to produce a flow of musical sounds at will, and to control just what they shall be. . . . The flow does not merely ramble on ambiguously, but centers about a germinal theme, which it proceeds to enlarge upon. . . .
>
> The experience of being in the throes of musical creation is distinctly an emotional one; there is a mere semblance of the intellectual in being able to steer and govern the meteors of sound that leap through the mind like volcanic fire, in a glory and fullness unimaginable except by those who have heard them. . . .
>
> I can only say that the musical ideas as they run through my mind seem to be an exact mirror of my emotions of the moment, or of the moments which I recall through memory (pp. 234–236).

When once the composition is recorded, the composer's influence over behavior then is colored by the interpretations given his composition by instrumentalists, singers, and conductors, and by all the circumstances surrounding each performance. Seldom does a composer hear the effects which were in his own mind during the creating, when he later hears his compositions performed. In February 1934 Werner Janssen conducted the municipal orchestra of Helsingfors, Finland, in an all-Sibelius program. Sibelius, the great Finnish composer, though sixty-nine years old, was present and completely overcome by this particular conducting of his compositions. For the first time he heard the effects from the instruments more like those in his mind, and wished that all his compositions might be recorded for the phonograph by Janssen with his unequalled skill. Janssen's influence over his audiences was evident also at his concerts in Riga, Latvia. During his first concert two hundred persons were seated in a theater with capacity for two thousand. For his second concert two thousand were seated and two hundred standing.

Personal testimonials of music's influence are legion. Music, art, and literature provide a balance in life which is sorely needed. Music in some form releases supercharged emotions. The mental hygienist considers music a form of escape. Together with religion and the other arts, music becomes a form of escape which is approved by society and is helpful to the group. Certain other forms of escape such as neurosis, alcohol, and criminality are not approved by society. William Lyon Phelps recently conveyed to us the spell cast over an audience by the superb conducting of Arturo Toscanini.

> There is nothing quite like this to be seen anywhere. To be present at an orchestral concert conducted by Toscanini is not merely a musical occasion; it is a spiritual experience. The people in the audience at the end of the concert feel both refreshed and inspired; it is as if they had all been mentally renewed. . . .
>
> Shakespeare said that music "can change the nature of a man." He did not exaggerate. There is a transforming, a regenerating power in music that takes us away from what is petty and amazing and silly and vulgar into a higher range of living.

We have given little heed to the art of living because we have become so absorbed in the business of living. The business man testifies to the great compensation to be found in music, to the balance and satisfaction it gives to life, and to the relaxation it affords from incessant toil. Music is a hobby or an avocation for many leaders in the business world. It has commanded the attention and controlled the creative thinking of leaders such as the late George Eastman, Premier Mussolini of Italy, former Speaker Longworth, Albert Einstein, Dr. Charles Mayo, Benjamin Franklin, the late William H. Woodin, and others. The memoirs of Count Albert Apponyi of Hungary, who had a political career, refer to the influence of music in his life as follows:

> Music has influenced my whole life. . . . I am neither a creative musician nor a performer, nor even versed in musical theory, but merely susceptible to its gifts. This is the case to such an extent that music forms an intrinsic part of my life and has influenced my whole personality. That applies also to my political activity. Of course I have never tried to find the solution to a tariff problem or difficult point of constitutional or international law in Sebastian Bach or Mozart, in Beethoven, or in Richard Wagner. But I have felt quite clearly that the influence of the greatest—but only of the greatest—music has increased my perceptive powers, and also my facility for surveying and grasping some question, even of politics, in its entirety.

Music listeners may be devoted to music as an end in itself, but many are attracted to its service as an aid to constructive and creative thought. Just as Apponyi grasped some questions in their entirety during the performance of great music, so have inventors, financiers, business executives, and statesmen found that the music surging from a symphony orchestra, flowing from string quartets, or vibrating from the organ, provides them with an atmosphere for their greatest creative thoughts. George Eastman, although he designated himself as a musical moron who knew only two tunes, Yankee Doodle and one which wasn't Yankee Doodle, began each day with music heard from his organ. There is some element in the continuity of sound which is conducive to uninterrupted thinking, an element which may be similar to that in the effects of long drives through mountainous country or the quiet woods, or long trips by train. The psychological value of this continuity of sound or the continuity of movement in riding lies in the stimulation it gives to self-activity, whether that activity is uninterrupted thinking, creative imagination, or performance of some skill. The fact that continuously rushing water stimulates release of energies through vocalizing and singing for many persons would warrant the construction of a great music school near Niagara Falls. The natural continuous sound of this volume of water would not only create the desire to sing and relieve the singer from self-consciousness so that he could perfect the mechanics of his technique more readily, but it would remove the annoyance to others of repetitive practice.

This factor of continuity is not so much an opiate, as popularly supposed, as it is a screen of sound or movement which stimulates a flow of energy, and assures noninterruption. The continuity of sound and movement with their climaxes of tonal mass or panoramas of expansive country transports one beyond the petty, annoying, frequently occurring incidents of a routine day. This continuity favors creative thinking, whether it be designing a dress, catching a new rhythmical pattern, hearing the motif of a new melody, or gaining insight into the solution of a baffling engineering problem. Such a psychological screen or atmosphere not only provides an escape from people and from self, but it also permits the highest constructive activity and the integration of imaginative and reflective thought. Its psychological value has scarcely been recognized. The direct effects of certain kinds of music and art for control of such an atmosphere provide some of the most important personal functions of the musician and artist.

From this point of view appreciative listeners may be classified into three groups. The *passive listener,* one who relaxes, naps if he likes, and experiences a mild amount of pleasure; the *active listener,* one who follows the musical score, tries to analyze some of the themes and identify the keys and modes (often to the distress of those near), or busies himself with the identification of those present; and the *motivated listener,* one who psychologically is far removed from those about him and from the music itself, but experiences intense emotional and intellectual flights into constructive and creative activities. The influence of music on the motivated listener is a potential influence. The effect of certain types of music, with which some psychological investigations are concerned, may be found in the experiences of any of the three types of listeners.

The following suggestions may help you and other people to enjoy these arts more or be influenced by them more effectively in the right direction. (1) Provide the opportunity or avail yourself of existing opportunities to hear music or see drama artistically rendered. (2) Be receptive and permit yourself to be absorbed in excellent performances. (3) Create the atmosphere of imaginative reflection and personal detachment which removes you from burdensome routine and momentary tensions. (4) Identify yourself with some phase of the drama or symphony through past experiences or dreams of the future. (5) When at the height of anger or in the deepest grief permit yourself to listen to that music which relieves and relaxes you. (6) Discover the symphony, string quartet, or organ composition which can stimulate you to spiritual exaltation and inspire you to want to do something as great. (7) Play an instrument for your own satisfaction and the release it affords to pent-up energies. (8) Sing with a group if possible, not to display a lovely voice, but to feel the unity, security, and strength of group participation.

If you have been indifferent to art expression of various forms, resolve now to hear, see or read the products of artists, not alone the recognized and proclaimed artists, but the product of the less known composer, painter, poet, or philosopher who portrays something which reaches your experience or hopes. A superintendent of a large city school system recently was concerned with the lack of musical experiences for the children in his schools. He wondered how many had not yet been aware of their talent for music or been moved by great music beautifully performed. And then with moist eyes he told of his personal experience—a childhood home where there was no music heard or performed, no music at school during his youth, and consequently his definite indifference to music. He had resisted the frequent invitations of a friend to attend symphony concerts until one day he yielded only on the condition that this friend agree to do something for him. When he realized the concert was to be given by the Boston Symphony Orchestra he was determined that it would "be over his head," and again refused. But he went, and for the first time in his life he realized a hunger for, and satisfaction in, the majesty and beauty of classical music. Its influence over him came with such deepening conviction that he set about to avoid its delay in the life experiences of the school children over which he exercised some control.

Psychological and Physiological Effects of Music

Hyde (1924) thought that if science attempted to employ the power exerted by music for specific purposes, such as to lessen nervous tension or arouse the emotions, it was necessary, not only to know the listener's preference for certain music or instruments, but also the psychological and concomitant physiological reactions produced by music. Hence she conducted an experiment in which the principal music consisted of three records—Tschaikowsky's Tragic Symphony played by the Boston Symphony Orchestra, the Toreador song from "Carmen," and the National Emblem March played by Sousa's Band. The effect of these varying types of music upon the functions of the cardiovascular system was determined by recording pulse rate, blood pressure, velocity of blood flow, and so on, for those who had a love for and training in music, and for those who lacked these. Control data were obtained from those who did not hear the music. She concluded that slow minor movements of the symphony should not be recommended for individuals who are fatigued, depressed, or ill. They might be employed, however, to subdue hilarity in individuals or masses of people. The Toreador song increased the functions of the cardiovascular system. The march was valuable in counteracting depressed reactions, in removing fatigue and arousing muscular activity. The indications were that those selections which were favorable to the functions of the cardiovascular system were also favorable to muscle tonus, working power, digestion, secretions, and other functions of the body.

Suggestions such as these are forerunners of the extensive practical use of music today to enhance the moods and emotional effects of motion pictures. Certain instruments upon which selected music is played are known to have a soothing effect, such as the pipe-organ or the violin, the music from which proves to be a sedative for many individuals.

The use of music for the sick has been known since history began. The medicine men of well-known Indian tribes sang while administering herbs to their patients; this helped make the herbs more effective. Musical therapy is used in many circumstances, but much of it is yet colored by some ceremonial or magic rite. The fact that reputable physicians know and believe in the effects of music to help restore disordered organisms is illustrated in treatments of shell shock during the World War. When scientific experimental studies are able to contribute more definite uses for music in relieving confused minds and distressed personalities, musical therapeutics may have a definite place in psycho-medical therapy. Before doctors should attempt to use music as a healing aid they should be able to select music especially fitting the particular case, not only the illness but the patient. His personality, temperament, habits, characteristics, passions, general reaction to music, favorable or unfavorable associations with certain compositions, and so on, are some of the requisite kinds of knowledge essential in attempting musical therapy.

Diserens (1926) made a thorough study of the influence of music on behavior. We shall refer to a few of the historical narratives reported by him in which music and musical instruments were considered definite controls in healing the sick. Thales (600 B.C.) was called from Crete to Sparta to cure plague by means of music. The second century A.D. revealed the traditional belief that music of the flute relieved sciatica. Medical records in the thirteenth century told of the Arabs dominating portions of Europe and founding great hospitals in which a music room—a striking feature—was a place where musicians played constantly for the sick. In the sixteenth and seventeenth centuries opinion was cited that a flute of hellebore cured dropsy; a flute of poplar wood, sciatica; a pipe of cinnamon wood proved a sovereign remedy for fits of fainting. During the eighteenth century Richard Brown employed musical treatment for mania, melancholias, and hypochondrias. In many cases of nervous disorders during the World War music often was the only medium through which a patient could be reached. According to Diserens most physicians believe in the strong influence of music upon the higher cerebral centers, and thence through the sympathetic nervous system upon other portions of the body, thus promoting digestive, secretory, circulatory, nutritive, and respiratory functions. Experimental methods are necessary for the development of a technique whereby music's known influence on behavior can be scientifically employed to control human behavior. In musical therapy it is one thing to know the types of music in general which affect the organism in specific ways, it is another thing to diagnose the ailment of the patient, but it is quite a different thing to find the interaction between the music and the individual patient.

The psychological processes of man are no doubt intimately interwoven with the arts from the early days of the experts in magic and mysticism to modern experimental times. In so far as music has been known to enhance physical and mental energy it has been a controlling factor in stirring men to action, in overcoming abulia or lack of will, in winning the affection of maidens especially with the playing of the flute, in building up morale, in transporting men to new heights of effort and achievement. As Diserens points out:

> The effectiveness of music in the magical ceremonies of primitives is furthered by the probability that its influence on physiological functions and behavior in general is greater than in the case of civilized individuals. Among the latter it has been observed that the overt effects are greater in children than in adults; in the ignorant than in the cultured, and among the latter in those who are not musically educated (p. 68).

The apparently unemotional nature of civilized man, which is in reality a conscious control of his emotions, is referred to as emotional detachment. This emotional control, which is essential for adequate adjustment to the social group, is finding counteractions and emotional releases in many forms of dramatic entertainment. Motion pictures in the gamut of their emotional expression permit individuals through socially approved avenues to experience vicariously the sins as well as the triumphs of life without the admission of these experiences to self or society. Many forms of entertainment provide an escape through emotional release, whether it be the solitary achievement of reaching the mountain peak, the social catharsis of sharing contagious laughter, or the supreme relaxation of copious weeping when one is emotionally possessed through an impressive tragedy. This release provided by the varied reactions to entertainment is found to a great extent through the arts and nature itself. We shall consider the effects of entertainment on behavior later in this chapter.

Controlled laboratory experiments with music. In contrast to the records of music's influence over behavior in the field of generalization, of mass effects, hazy opinion, and much valuable observation which we have considered, let us turn again to the definitely controlled experiments of the modern laboratory. For many years the vibrato in music, as heard especially in voices and from the violin, has been studied in phonographic recordings from three points of view. The physiological study of the vibrato is concerned with the singer, the psychological with the auditor, and the physical with the connection between the two which is the sound wave. The vibrato is found in voices considered beautiful. It is an agent of control, and reaches the emotions of an individual. Seashore and his associates, in the first volume of studies devoted to the vibrato, sum up many important discoveries about this characteristic in tonal effects. The vibrato at this stage of the evolution of its definition is described qualitatively and defined quantitatively. Qualitatively the vibrato in music is a periodic pulsation, generally involving pitch, intensity, and timbre, which produces a pleasing flexibility, mellowness and richness of tone.

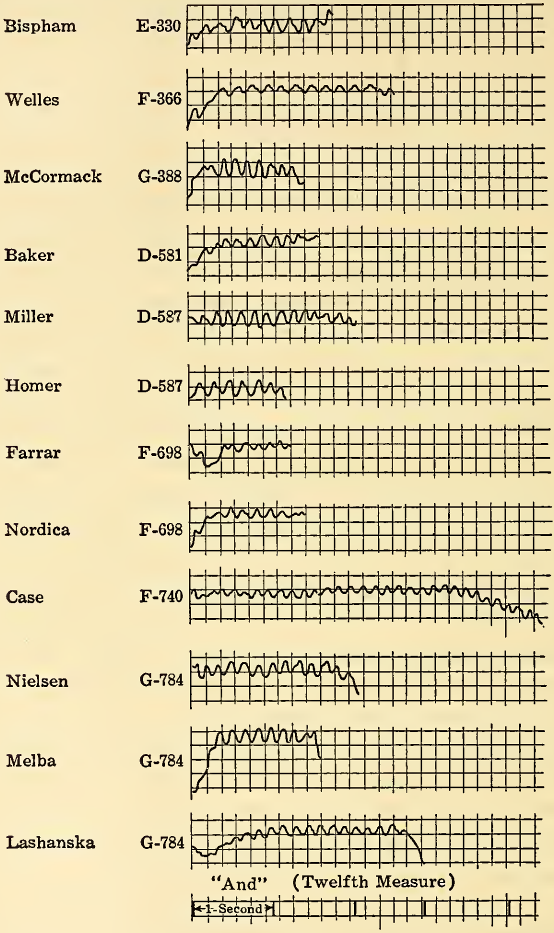

Fig. 55. The vibrato in the voices of twelve artists taken from the same tone "and" in the twelfth measure of "Annie Laurie." From C. E. Seashore, editor, 1932, Vol. I, p. 17.

Quantitatively an artistic vibrato consists of a periodic oscillation in pitch in which the extent of oscillation for the best singers averages approximately a half tone and for instruments approximately a quarter tone, at an average rate of approximately six or seven cycles per second, and is usually accompanied by synchronous intensity and timbre oscillations which play a secondary rôle.

Metfessel (1932) shows the vibrato of twelve artists, Fig. 55, in singing the word "and" in the twelfth measure of "Annie Laurie." Each vertical space on the graphs represents a half-step of the even-tempered scale, and 5.88 horizontal spaces represent one second of time. The vibrato is not to be confused with the tremolo heard in voices. The tremolo is considered a disagreeable vibrato, and is wider and slower than the artistic vibrato. Is the vibrato found in many singing voices? A survey has disclosed that about one in every five individuals after adolescence has some sort of a vibrato. From observations at least nine out of ten of those who have vibratos are known to go to a voice teacher for study. The vibrato is one of many important factors in the singing voice. All vibratos, however, are not beautiful, although all beautiful voices have a vibrato.

The rate of the vibrato has been determined and found to be its life. From a study of 5,443 individual vibratos the average rate was found to be 6.8 per second, with a range from 5 to 10.5 pulsations a second. The artistic rates, however, extend only from 5.5 to 7.5 pulsations a second. Some of the important facts regarding the vibrato are described in terms applied to any work of art such as unity, variety, symmetry, rhythm, and balance, all of which are fundamental concepts of beauty. Thus the laboratory contributes, in its controlled, experimental, scientific manner, one of the exceedingly important means of influencing the responses of individuals to a recognized form of beauty.

The influence of the major and minor modes in music upon an individual's effective responses has been the subject of a recent experiment by Hevner (1935). Two inquiries were made: (1) Are the characteristics inherent in the major and minor modes of music, according to history, apparent to listeners? For example, the major mode is considered dynamic, joyful, exciting, bright, hopeful, happy, and so on; the minor mode, passive, gloomy, despairing, melancholy, dull, soothing, and so on. (2) If these typical characteristics are apparent, to what extent is their recognition due to training in music, to intelligence, or to talent as measured by the Seashore tests?

The effect of the modes on the listener can only be a part of the total effect, including melody, rhythm, harmony, tempo, intensity, which is influenced by the immediate circumstances preceding the hearing of certain music. In order to control many variable factors, relatively short compositions such as Martini's Gavotte (F major), Schumann's Folk Song (E minor), Bach's Musette (G major), and others were written in two versions for this experiment, one the major mode, and the other the minor mode. This transposition made only slight differences in melody and harmony. These compositions were heard in a definite scheme by 205 students who checked the adjectives in a mimeographed word list which seemed to them descriptive of the music. The results showed that the expressed characteristics of these modes were in close agreement with those historically designated, and that training was more important than either music ability or intelligence in discriminating these characteristics. Applications of music expressed either in the major or minor keys are cleverly used for the sick, to stimulate action in work and war, and to control religious groups, but we yet are a long way from the necessary knowledge for their effective control in influencing human behavior, especially influencing in a desirable direction.

Measuring preferences for different composers. Folgmann (1933) has contributed an experiment outside the laboratory in which he attempted to measure the quantitative preferences for the music of different composers. His inquiry, which included nineteen composers, was extended to 308 members of four major symphonic units—the Philadelphia Orchestra, the Philharmonic Symphony Society of New York, the Boston Symphony Orchestra, and the Minneapolis Symphony Orchestra. These are some of his findings. Beethoven always was preferred first. McDowell and Herbert were last consistently. In the Philadelphia Orchestra conducted by Leopold Stokowski, Brahms and Bach were of equal strength to Beethoven; Bach, Debussy, and Stravinsky were higher in the scale than for any other orchestra. In the New York Philharmonic conducted by Arturo Toscanini, Beethoven's great strength stood out against Tschaikowsky's low position in the preference scale. Leopold Stokowski himself is a great admirer of Bach, Debussy, and Stravinsky. Arturo Toscanini, a great interpreter of Beethoven, is known to have an aversion to Tschaikowsky. The attitudes of these forceful leaders are reflected in the musicians under their control. It is quite possible that preferences of loyal groups in these respective concert-halls might also reflect preferences in harmony with their admired conductors. The influence of conductors, cites Folgmann, is one of the factors affecting preferences for certain composers. Other influential factors were the nationalities of members of the orchestras, their extra-musical activities, and the different instruments they played.

Orchestral conductors wield great power with orchestral effects, a power which is enhanced by mass effects in the music and upon the audience. Generals of armies are well aware of the absolute necessity of music to maintain morale. General Linevitch is quoted by Diserens (1926) as saying "music is one of the most vital ammunitions of the Russian army . . . without music a Russian soldier would be dull, cowardly, brutal, and inefficient . . . from the music he absorbs a magic power of endurance and forgets his sufferings and mortality. It is a divine dynamite." Ministers know the power of music in unifying their congregation, in molding the religious moods of their own thoughts with those of their parishioners. Industrial leaders are beginning to recognize the greater control they can exercise over workers by the use of music, not only as a means of increasing output but as a means of improving the satisfaction and spirit of the toilers. Modern business schools and training departments employ music to control or accelerate the speed of learning skills in such activities as typing. Other references have been made in previous chapters to the effects of music upon learning, work, fatigue, and powers of concentration.

Controlling Behavior through Entertainment

In order to concentrate the vast field of entertainment into as unified a channel as possible, we shall consider motion pictures for two reasons. First, so many of the arts representative of drama, of motion as in the dance, comedy, color, sound, of the art of personal conduct, business, and social behavior, of the art of contrasts, humor, love, and so forth, are blended into unified continuous dramas of life which comprise far-reaching influences in education. Second, there is a noteworthy group of recent studies dealing with the influence of motion pictures upon the behavior of children, adolescents, and of adults to some extent. Psychological interest in the revelations cf these studies is centered in the recognized change in an individual's behavior and attitude after experiencing certain pictures, and in the resultant effect these changes contribute toward a healthier and happier adjustment in the social group. It will not be our province here to judge the influence of motion pictures as good or bad, but to realize to some degree their real and potent influence on human behavior.

Officially, motion pictures are considered a source of amusement. Personally, they often prove an escape from reality and routine, and a vicarious form of emotional outlet which may prevent impulsive expression in harmful ways. In so far as the relief from tension provides an emotional catharsis, some benefit is derived. Why do you go to the movie theaters? In what ways do your experiences there modify your behavior patterns? Dale (1933) gives some of the answers of a group of high-school students to the inquiry, What are motion pictures for? Four of their reasons, viz.: it's a way to learn about life; you learn what happens when you make certain choices; they show what people do under different circumstances; it gives you the artist's idea of life; are indicative of the vast power motion pictures may exercise over human behavior. The appreciation of art and beauty; the motivation to learning through an emotional medium; the observation of behavior patterns in skills, society, business, courtship, thwarted ambitions, tragic disappointments; the realization that things do not always go right, these and many other influences of motion pictures you may think of are directing forces in the development of personalities which are enduring and flexible.

How much information do you obtain from motion pictures? Holaday and Stoddard (1933) conducted a three-year study with seventeen commercial pictures such as *Tom Sawyer*, *New Moon*, *Stolen Heaven*, *Rango*, *Passion Flower*, *Frightened Caverns*, and others to derive some answer to this question. More than 3,000 children and adults participated as observers in four groups equated for age, intelligence, and the like. Two tests were made, one for the extent of retention of the plot of the story, the other for general information of historical, geographical, or mechanical items. Four hundred carefully selected questions were answered the next day after viewing each of six different pictures. Using the adult score as a basis, children eight and nine years old made a 60 per cent score, children eleven and twelve years old had a 75 per cent score, and youths fifteen and sixteen years old made a 91 per cent score of that obtained by adults. This means that the amount of information obtained is high. The type of material remembered best was action in sports, general conversation, crime, and fighting when it had a high emotional tone and occurred in familiar environments such as home or school. There was no sex difference in amount of information and retention. The "curves of retention" are considerably higher than those obtained for other materials. Children in the second and third school grades remembered at the end of six weeks 90 per cent of what they knew the day following the picture. In *Tom Sawyer* they remembered more at the end of six weeks and still more at the end of three months. Holaday and Stoddard conclude that the amount of information gained from motion pictures is tremendously high. The motion picture becomes, like education, a potent force in controlling and influencing human behavior.

What is the influence of motion pictures in the development of attitudes? Peterson and Thurstone (1933) selected thirteen motion pictures from a review of 600 to 800 pictures which would likely produce noticeable changes in attitude if changes could be produced by pictures. There were eight social objects for which the pictures were selected to discover changes in attitude after seeing the pictures dealing with these social objects:

The Social Objects	The Pictures
The Germans and war	*Four Sons*
War	*All Quiet on the Western Front* *Journey's End*
Punishment of criminals	*The Criminal Code* *Numbered Men* *Alibi* *Big House*
The Chinese	*Welcome Danger* *Son of the Gods*
Capital punishment	*The Valiant*
Crime	*Street of Chance*
The Negro	*The Birth of a Nation*
Prohibition	*Hide Out*

The measuring instruments were attitude scales consisting of approximately thirty statements, each expressing an attitude toward the social object, varying in intensity from a position of one extreme attitude against, to another position of an extreme attitude in favor of. For example, in the attitude scale toward war, two expressions of the extreme attitude against war are:

> There is no conceivable justification for war.
> All nations should disarm immediately.

Two expressions of the extreme attitude in favor of war are:

War is ennobling and stimulating of the highest and best qualities of humankind.
Might is right.

Two expressions with middle scale values are:

Peace and war are both essential to progress.
Wars are justifiable only when waged in defense of weaker nations.

Eleven different highly sensitive attitude scales of which the attitude scale for war is one were used in this study. Approximately 4,000 individuals, mostly junior and senior high-school students, indicated their convictions by a check mark when they agreed and a cross when they disagreed. Figure 56 shows the attitude as measured toward war before and after seeing the film, *Four Sons*. The change is not large, but it occurred in the expected direction. Such pictures exercise control in a shift of behavioral attitudes toward social values.

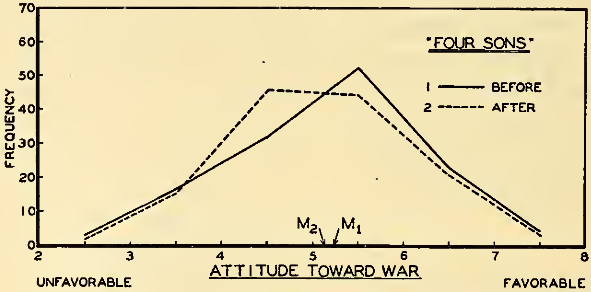

Fig. 56. Change in attitude toward war of 132 school children in grades 7–12 inclusive before and after seeing the film, *Four Sons*. The mean attitude score of 5.19 before seeing the picture changed to 5.10 after seeing the picture. From R. Peterson and L. L. Thurstone, 1933, p. 12.

One of the outstanding pictures of potent influence was the *Son of the Gods*, a picture considered favorable to the Chinese. Before seeing the film 182 children in high school (ninth to twelfth grades) had a mean attitude score of 6.72 on the scale. After seeing the film the mean score was 5.50, which was 1.22 steps in the favorable direction. This shift is considered "very striking." Three conclusions emerge from this study which has significance for education and psychology: (1) Single pictures produce a change in attitude, (2) the influence of pictures is cumulative, (3) the effects are substantially permanent.

Influence of Motion Pictures on Conduct

Blumer's (1933) analysis of the control and influence of motion pictures over human behavior and conduct is bristling with psychological implications. Only a few of them will be cited in order to increase our knowledge of the powerful control motion pictures have over the conduct of children, youth, and adults. This control is not a result of the content of the picture alone but of the sensitiveness, disposition, and yearnings of the person viewing the film. A deeply motivated psychology underlies those conduct patterns seen in the films which fit into a scheme of life that will lead to realization of the aims of the individual. Through consideration of various concepts crystallized in these studies, one must keep in mind the continuity of individual personality rooted in hereditary patterns, which persist even though interrupted by momentary behavior attitudes. Many of these behavior patterns are tried out by those who have seen them pictured, some patterns are ineffective, others are effective and fulfill a psychological need of adjustment.

Blumer gathered his information in experimental and controlled situations primarily through motion picture autobiographies. These autobiographies were accounts of experiences with "movies" in so far as they could be recalled, written in as natural and truthful a manner as possible. A guidance sheet was developed for writing these autobiographies, identified by code numbers. Approximately 2,000 individuals participated in representative cities and communities, including students in high school, college, junior college, and university, and workers in office and factory.

Patterns and content of play during childhood were definitely influenced by the motion pictures in this experiment. But the make-believe play in impersonations complicated the task of determining specific lines of conduct patterns. Imitation by the adolescents, however, carried over into actual behavior patterns which removed them from the realm of make-believe. Considerable imitation by youth and adults resulted in ideas for interior decoration, and in modes of beautification, and so forth, such as styles of hair and of dress—one youth set out to purchase a suit just like that of the leading man, double-breasted, identical cut of lapels, and same number of buttons. Many of the objects and behavior patterns seen in the motion pictures are reproduced in real life by many of the spectators and not only approved but considered correct form.

Motion pictures prove to be a school of etiquette. The "technique" of doing things is observed for table manners, night club conduct, business behavior, how to walk, how to sit, how to use one's hands, and so forth. The following incident is one of several given by Blumer.

> *Female, 19, white, college sophomore.* Movies first taught me that hands could be used so as to make them appear beautiful. A soft, relaxed pose, I learned, was the best; I began to notice carriage and bearing and to check up on myself and on others. Whenever I see a character with a nervous habit such as tapping of the table with a finger tip, rubbing the side of the cheek or swinging a leg, I hurriedly search myself lest I have any such habits.

These mannerisms are tried out for their effectiveness and serve as a control for adequate adjustment and fulfillment of desires. If the copied behavior is effective, the satisfaction and confidence in self becomes a directing force in control. Sometimes the imitation of a particular mannerism is not always effective, as related by this girl, 19 years old, white, and a college sophomore.

> I saw a picture in which the heroine very coyly, when conversing with a young man, would close her eyes, slightly nod her head, and smile. And when she closed her eyes, her eyelashes were shown off to their best advantage. And so I decided that this was very "cute," and having always been vain about my eyes, I adopted the trick. It so happened that within about a week I attended a formal dance. During the evening I used my charms, but to my dismay they weren't appreciated, but rather criticized! After several closings of the eyes and noddings of the head, my friend asked me if I was tired and wished to start home. You are assured that I didn't continue my newly acquired trick. And my coquette career came to an early end.

The technique of courtship is observed in detail. About 33 per cent of 458 motion picture biographies written by high-school students related that definite imitation of ways of making love was made from motion pictures, 28 per cent gave a definite denial, and for 39 per cent the information was lacking. The forms of conduct adaptable to relations between the sexes, at a time when a college sophomore frankly admits he doesn't know how to conduct himself properly when starting to go out with girls, are intense psychological factors in the assurance of proper behavior and self-control. When the behavior patterns of favorite actors and actresses serve as a guiding principle in the molding of life conduct patterns, the depth of the motivation is easily suppressed and defies psychological analysis. Many individuals have expressed themselves that motion pictures are a liberal education in the art of loving.

The guidance in manners, mannerisms, and conduct is not only extensive but the patterns become deeply impressed, learned as they are through emotional settings in the form of entertainment. Charters (1933) points out:

> Children are born into a world of which they know nothing. They are little individualists who have laboriously to learn how to fit into social groups. They possess impulses, instincts, wishes, desires, which drive them on to seek experience, adventure, and satisfaction. They are avidly interested in everything that seems to them to be able to provide what they want.
>
> Yet they know so little and are so anxious to learn. They seek information, stimulation and guidance in every direction. They are often confused, frequently maladjusted, and sometimes without confidence. In this situation the motion picture seems to be a godsend to them. While they are being entertained they are being shown in attractive and authoritative fashion what to do . . . always the motion picture is potentially a powerfully influential director (p. 41).

Fantasy and day-dreaming are stimulated by the films. Of the 458 high-school students, 66 per cent gave distinct evidence of the influence of motion pictures on fantasies and day-dreaming, 10 per cent denied it, and 24 per cent gave no information. More than 50 per cent of 1,200 children in the sixth and seventh grades acknowledged the influence of films on day-dreaming. Heroism, adventure, luxury, fine clothes, travel, and so on, are spontaneous energizers of a dream world. The vicarious enjoyment by the adolescent of these themes and those of love does not always result in passive idleness. These forms of social behavior are known to relieve personal strain, to be instigators of ambitious activity for noblest achievement. Contrast this power in development with the fantasies which arise from seeing motion pictures which permit basking in sin without necessary admission to self or social disapproval; between these extremes a range of psychologial intensities of behavior is revealed. According to Blumer, from such accounts given and casual reflections on the content of day-dreams one is led to expect that fantasy is largely monopolized by the kinds of experiences tabooed by moral standards of community life.

Emotional possession. Experiences recorded in the motion picture autobiographies in which emotions were aroused to an extent that interfered with self-control, or resulted in the complete loss of self-control, are referred to by Blumer as experiences of emotional possession, for want of a better term. These experiences were records of fear and terror, of sorrow and pathos, of love and passion, of thrill and excitement. The behavior, which often is short-lived, is expressed in forms of shouting, weeping, biting nails, pulling one's clothes, shielding the eyes, and so on. Later effects are expressed through terrifying dreams, nightmares, and occasionally shocks which may lead to neurotic proportions. The shrills and shrieks of children in small neighborhood theaters, that mount to deafening proportions during the showing of serial pictures, are embryonic demonstrations of adult loss of control in college games and political meetings. Blumer believes the psychological characteristics of emotional possession are essentially a stirring up of feeling, a release of impulse, and a fixation of imagery. As he asserts:

> To have induced emotional possession is a mark of the effectiveness of dramatic art. This is precisely what the dramatist endeavors to achieve—to grip the observer to gain control over him so that he becomes malleable to the touch of what is presented. This is probably also what the movie-goer seeks: a picture which has a "kick" to it, one that literally jolts him out of himself, one that figuratively pierces his shell, dissolves his existing feelings and attitudes, and sets his impulses and imagery in a new direction (p. 127).

Emotional detachment. The counteraction to that behavior resulting in loss of control is the behavior in which control over self is maintained, and which is described as emotional detachment. This is a type of emotional maturity characterized by attitudes of indifference, sophistication, scorn, cynicism, resulting from a certain amount of reflection and criticism. It reminds one of the impersonal attitude when some frustration or disturbance seems unsurmountable and one longs for the power to see things in perspective, to get them detached from self so that they can be viewed unemotionally from a distance. This achievement of self-control over one's emotions can often be attained by help from older playmates, who are more sophisticated and have grown beyond the experience, or by parents and teachers who can understand and "talk it out" with one. Sometimes it is a mere matter of growth and maturation. There is definite development of attitudes toward the serial and Wild West pictures as follows: they delight the children in the fourth grade; by the time of the sixth grade there is less enthusiasm, signs of self-consciousness, and irregularities in interest; by the time of eighth-grade development, there are outright expressions of dislike and disapproval. The importance of emotional detachment cannot be over-emphasized in its value for control over one's impulses, emotions, learning, and thinking. It is a balancing force which favors poise and wholesome adjustment to social life. The following comments by Blumer are psychologically sound for wholesome adjustment.

> This discussion of emotional detachment may throw some light on the problem of controlling conduct in the face of the influence wielded by motion pictures. At present, chief reliance is being placed on censorship as a form of control. Censorship is, of course, a negative kind of control, confined to detention and rejection of pictures, and functioning under circumstances which make very questionable its effectiveness. The more effective and so desirable form of control comes with the development of attitudes of emotional detachment. The possibility of forming such attitudes in children and adolescents through instruction and through frank discussion of motion pictures instead of categoric condemnation of them is, in the opinion of the writer, very large. A greater willingness on the part of parent and teacher to talk about pictures with children and adolescents, to interpret them in broad ways and so to build up attitudes toward them, holds promise of better results (p. 140).

The modern conceptions of schemes of life which are obtained through the motion pictures and are setting patterns of behavior and conduct in relations with others throughout social life, crystallize into rigid patterns of life conduct. These set patterns are not localized within the immediate vicinity, but they involve stereotyped views of people in other lands, of various nationalities, of different occupations, and extend to the molding of public opinion, race prejudices, religious and social beliefs. Their effects are greatest upon those who have no access to other sources of knowledge. The content of one film will arouse a diversity of reactions and attitudes dependent for its interpretation upon an individual's background and experience. These findings from the motion picture studies will broaden your interpretation of many educational and psychological factors involved in the influence of motion pictures on the behavior of individuals. Many of the influential factors referred to in these studies supplement the psychological factors involved in the control of self and the control of others with which this book is concerned. For this reason further comments and psychological applications are not given in this particular section.

Music, the arts, and entertainment wield a known influence over behavior of people, but the scientific technique for applying this knowledge to the particular group and to the specific individual is hidden in the future. Here, then, from the psychological point of view, is an almost untouched field for research and for development of methods of practical control.

Questions for Yourself:

1. Do the ideas in this chapter stimulate your recall of personal experiences in which music, drama, or entertainment in some form influenced you? Cite some specific experiences.
2. Can you identify an art experience of your own?
3. Within your own experience when and how has music affected the behavior of others, at college athletic events, at social events, at church, in the community, at concerts, and so forth?
4. What effect or influence have motion pictures had upon your own attitude and conduct?

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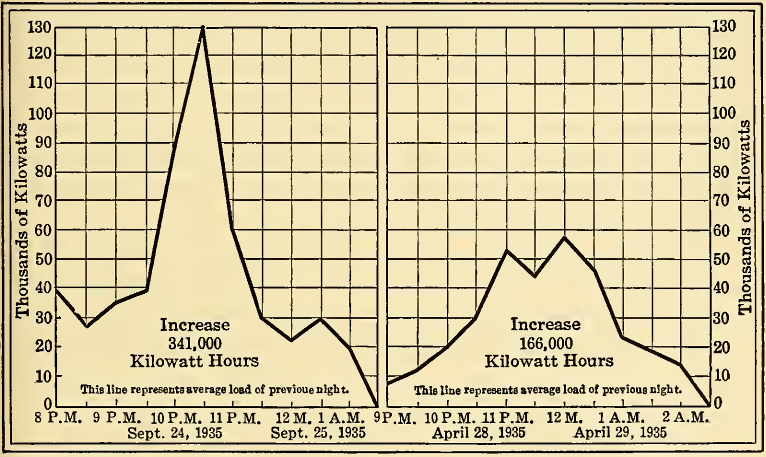
CHAPTER XXV

CONTROLLING PUBLIC OPINION

Cynical as it may sound, it is nevertheless true that the business of controlling public opinion consists of influencing people's opinions by playing on their emotions, prejudices, and ignorance, rather than appealing to their intelligence. Frank R. Kent (1928), political writer for the *Baltimore Sun,* says that outside of professionals and jobholders there are certainly not more than 500,000 voters who are informed and continuously interested in national or state politics. How insignificantly small a proportion this is may be seen from the fact that there were more than 39,000,000 ballots cast in the 1932 presidential election.



Prize fights are popular radio events, and here is the electrical consumption chart of the New York area, to prove it. Note how at 8:30 P.M., Sept. 24, anticipating the Louis-Baer encounter at 10 o'clock, the electrical flow began to increase, reaching a peak soon after the fight ended at 10:30 P.M.

President Roosevelt broadcast a "Fireside Chat," April 28, 1935. Electrical consumption began to soar at 8:45 P.M., reaching a peak at 11 o'clock, when the President began to talk. Father Coughlin was scheduled to speak at midnight. Note the curve's sharp drop when a substitute speaker was announced.

FIG. 57. Chart and caption appeared in *The New York Times,* September 29, 1935.

There are many millions, however, who respond readily when elemental emotions like fear, hate, envy, humor, and greed are aroused. Persons or organizations that appeal to these traits in the mass of mankind are effective in controlling public opinion. An appeal to loftier motives is either uncertain or utterly vain.

In September 1935, when the country was still uncertain whether or not it was emerging from the Great Depression of the '30's, some 84,831 spectators paid $932,944 to see four rounds of fistic combat between Joe Louis, the "Brown Bomber," and Max Baer, the "Livermore Larruper." Fight fans dropped down out of the air from California, streamed in by automobiles bearing the maroon and white tags of Texas, the blue and white of Illinois, the yellow and blue of Louisiana. They paid as high as $200 a seat to see the deadly cold execution of left jabs and blasting right uppercuts by a Detroit Negro, and felt they were well rewarded for their trouble and expense.

The relative appeals made by radio broadcasts of the Louis-Baer encounter and one of President Roosevelt's "Fireside Chats" is indicated by Fig. 57 on page 557, which shows electrical consumption during broadcasts of these two events.

The clay with which people work when they are trying to influence the mass of public opinion is, therefore, fundamental human emotions. For the purposes of our brief discussion it may be advisable to limit our consideration of the control of public opinion to two phases: (1) controlling public opinion in wartime; (2) controlling political opinion.

Public Opinion in Wartime

When a country is at war, its principal aim is to win. For that purpose it needs a united and militant spirit at home, which not only makes coöperation in winning more effective, but also contributes to the morale of the men at the front and tends, perhaps, to discourage the enemy. Other purposes of propaganda in wartime are to preserve the friendship of allies, and preserve the friendship and perhaps even gain the assistance of neutral nations.

The need of a unified nation in wartime was expressed by Premier Benito Mussolini in his radio address to the Italian nation on the eve of its invasion of Ethiopia, the address to which we have referred in Chapter II. To be effective a people must be united in the pursuit of a single objective. Mussolini claimed "Twenty million men, but with one sole will—one sole decision."

What is propaganda? At this point we should stop and consider definitions. The business of controlling public opinion in wartime especially, but at any time generally, is often called *propaganda.* Publicists, writers on propaganda and public opinion, have strained themselves trying to define *propaganda.*

Some say there is good and bad propaganda. Others say there is no such thing as good propaganda. E. L. Bernays, the publicist, defines propaganda: "Modern propaganda is a consistent, enduring policy of creating or shaping events to influence the relations of the public to a given enterprise." Walter Lippmann defines propaganda as "the effort to alter the pictures to which men respond, to substitute one social pattern for another." Calvin Coolidge gave a speech when president in which he declared: "Propaganda seems to present part of the facts, to distort their relations, and to force conclusions which could not be drawn from a complete and candid survey of all the facts. Of real education and of real information we cannot get too much; but of propaganda—we cannot get too little." Frederick E. Lumley (1933), in *The Propaganda Menace,* reviews many definitions and constructs a new one of his own: "Propaganda is promotion which is veiled in one way or another as to (1) its source, (2) the interests involved, (3) methods employed, (4) the content spread, and (5) the results accruing to the victims."

In propaganda during wartime, the basic emotions which are played upon with greatest profit are *fear and hate of the enemy, hope of victory,* and *love of country.*

Atrocity stories. One of the most effective means of frightening a country into unified action is to flood it with atrocity stories. This is an ancient method. Certainly it goes back as far as the Crusades, when atrocity stories from the East were employed to urge Christians to seek out and slay the infidel.

Atrocity stories played an important part in propaganda during the World War. They were used by all sides. German sins were classified by the French government into the following groups:

Violation of the neutrality of Luxemburg and Belgium.
Violation of the French frontier before the declaration of war.
Killing of prisoners and wounded.
Looting, arson, rape, murder.

Use of forbidden bullets.

Use of burning liquids and asphyxiating gas.

Bombarding of fortresses without notice and of unfortified towns; the destruction of buildings consecrated to religion, art, science, and charity.

Treacherous methods of warfare.

Cruelties inflicted on civilian population.

Germans came to be regarded as "Huns" or barbarians, not only by the French but by Americans and all Allied peoples. President Woodrow Wilson, in his war message to Congress, declared that the United States was not going into a war against the German people, but it soon became apparent that this war was to be no different from all other wars which have started with professions of "no hate against the enemy people." That tolerant point of view is rapidly dissipated as the result of stories of atrocities for which the whole enemy people are held to be responsible.

Exaggeration and distortion. These atrocity stories do not always start as deliberate lies or as half-truths. Often, in the white heat of passions engendered by the conflict, they start as commonplace incidents and are exaggerated and distorted into stories unrecognizable when compared with the original. E. L. Clarke (1929) in his *Art of Straight Thinking* says: "A valuable illustration of the way in which exaggeration and lying develop a monstrous falsehood out of a tiny germ of truth is afforded by the following series of wartime statements made by European newspapers:

Cologne Zeitung, Germany:

"When the fall of Antwerp got known, the church bells were rung" (meaning in Germany).

The Matin, Paris:

"According to the *Cologne Zeitung*, the clergy of Antwerp were compelled to ring the church bells when the fortress was taken."

The Times, London:

"According to what *The Matin* has heard from Cologne, the Belgian priests who refused to ring the church bells when Antwerp was taken have been driven away from their places."

The Corriere della Sera, Milan:

"According to what *The Times* has heard from Cologne via Paris, the unfortunate Belgian priests who refused to ring the church bells when Antwerp was taken have been sentenced to hard labor."

The Matin, Paris:

"According to information to the *Corriere della Sera* from Cologne via London, it is confirmed that the barbaric conquerers of Antwerp punished the unfortunate Belgian priests for their heroic refusal to ring the church bells by hanging them as living clappers to the bells with their heads downward."

The appeal to hope. Almost equally potent as the appeal to fear and hate is the appeal to hope. There was great talk during the World War of "morale," both the morale of the people at home, the men at the front, and the enemy. This so-called morale gains nourishment from hope, the state of mind which visions better things to come.

During the war there were many miraculous stories circulated, one of the most interesting being an account of how at the Battle of Mons there appeared before the British lines angels in serried ranks, bearing a strange likeness to the bowmen who fought for Henry V of England at Agincourt, and how these phantom Bowmen of Mons rained arrows upon the foe. Arthur Machen, in *The Angels of Mons*, tells how he originated this fable as a fantastic short story, and how it spread, being reprinted in varied forms in many periodicals and repeated by word of mouth until it was accepted by most people as an actual occurrence. The emotion of patriotism as such naturally plays a large part in influencing opinion during wartime.

Methods of Propaganda

Someone has counted the methods of propaganda: *suppression*, *distortion*, *minimization*, *exaggeration*, *diversion*, and *fabrication*. Examples of all these methods will not be given here. It is interesting, however, to glance at some of the uses of suppression. During the war there was little tolerance here. An amendment, since repealed, was made to the Espionage Act, which punished with twenty years' imprisonment any language intended to bring the form of government of the United States or the flag, or the uniform, into contempt, contumely, or disrepute. Professor Zechariah Chafee of the Harvard Law School listed some samples of punishment under the law as it stood. For saying, "I am for the people and the government is for the profiteers," a girl was sentenced to ten years' imprisonment. For questioning the legality of the American invasion of Russia without declaration of war, sentences of twenty years' imprisonment were imposed. Under the Minnesota State Law, it was held a crime to discourage women from knitting by saying: "No soldier ever sees those socks."

Fruits of Wartime Propaganda

Obviously, wartime propaganda is justified to the extent that it helps a nation to win a war. This is the direct and simple effect of propaganda.

But there is a more indirect and more insidious effect. In the hatred and passions fanned into consuming flames by the propaganda of wartime there are born the germs of wars to come.

Much of the unrest in the world today may be traced to the provisions of the Treaty of Versailles, and these provisions may be attributed directly to the suspicion and hatred in which the German nation was held by the Allied peoples. This state of mind made such a treaty almost necessary; the victorious peoples would tolerate nothing else.

Propaganda Today

The great propaganda machines set up during the war have lived on in one form or another. In the spring of 1933, Foreign Minister Joseph Paul Boncour of France asked for and received an additional 33,000,000 francs for French propaganda abroad. He said this was necessary to keep pace with competing European nations, and told the sums (in francs) spent for propaganda by other nations:

Germany	256,000,000
Italy	119,000,000
France	71,000,000
Britain	69,000,000
Poland	26,000,000
Hungary	23,000,000
Czechoslovakia	18,000,000
Jugoslavia	13,000,000
Rumania	7,000,000

The figure for Germany represents the annual expenditure of the German Republic; it is about $17,000,000 in American money. Under Hitler it is estimated this amount has risen to as much as $80,000,000.

Suppression of news, a phase of propaganda, is also a part of Hitler's program. It was reported at the beginning of 1936 that Germany saw the death of 1,000 newspapers, "suspended" by official order because they opposed Nazi rule. Chancellor Hitler perhaps remembered Napoleon's statement:

> If I granted liberty of the press my government could not last three weeks.

Controlling Political Opinion

There is no very sharp line of demarcation between the subject of controlling public opinion in wartime and controlling political opinion. Certainly politics is not divorced from the conduct of wars. However, in this discussion, we shall consider briefly the business of influencing people's opinions in regard to the acquiring and maintaining of political position. This, of course, includes not only the matter of elections, but also the defense and attack of policies and personalities in struggles over the balance of political power. We shall also touch upon the methods used by corporations to influence political opinion for or against specific legislation in which they are interested.

Psychology in politics did not have much importance until the introduction of some semblance of democratic government. In medieval days when kings and tyrants held sway, there was not much point in influencing public opinion, because the opinion of the public did not matter much. When the English, American, and French revolutions ushered in various forms of democratic government, the opinions of the people came to matter very greatly, and proficiency in influencing the opinions of the electorate came to be the key to great power.

How the masses were incited to rebellion in Massachusetts before the Revolution is described by James Truslow Adams (1931) in *The Epic of America* when he tells about the activities of Samuel Adams, who would be termed a demagogue these days. Writing of the propaganda activities of Samuel Adams, the author says:

> With the upper classes become lukewarm or hostile to his continued propaganda, with the obnoxious legislation repealed or modified, he had to trust to generalizations and emotional appeals. A good example of his use of the latter was the affair called the "Boston Massacre." As part of the general imperial policy following the war, the British government had stationed some regiments in Boston. They were under good officers and good discipline, and there was no more reason why they should have made trouble than in any provincial garrison in England. Adams, however, was continually stirring up the public mind against them; John Adams reported finding him one Sunday night "preparing for the next day's newspaper—a curious employment,

> cooking up paragraphs, articles, occurrences, etc., working the political engine." Finally, one March evening, as a result of more than usual provocation given by taunting boys to soldiers on duty, an unfortunate clash occurred. There was a confusion, a rioter's shout of "fire" was mistaken for an officer's command, and several citizens were killed. The officer surrendered to the civil authorities, was tried, defended by John Adams and Josiah Quincy, Jr., and acquitted. But Samuel Adams at once saw the value of the incident. Every emotion of the mob was played upon. The affair was called a "massacre," and in the annual speeches for a number of years to commemorate its anniversary the boys and men who had taken part in the mobbing were described as martyrs to liberty and the soldiers as "bloody butchers."

From this instance of the use by the founding fathers of the arts of influencing public opinion, we might skip to what Claude G. Bowers (1929) calls "the Tragic Era" following the Civil War. The emancipated negroes were told that they were "God's chosen children" and "they clung to the illusion planted in their minds by demagogues that the economic status of the races was to be reversed through the distribution of the land among them. This cruelly false hope was being fed by private soldiers, Bureau agents, and low Northern whites circulating among Negroes on terms of social equality in the cultivation of their prospective votes." This was the lowest form of the business of controlling political opinion.

Mass of voters uninformed. Modern politics is based upon these same principles that the great mass of voters are uninformed and unintelligent, and that they can be reached only through their emotions or swayed by appeals only to their prejudices, passions, or personal interests. One of the tenets of practicing politicians is that the voice of the people is *not* the voice of God, and that when the American people decide an issue rightly it is an accident and not because of unerring instinct for the right or a clear comprehension of issues.

Perhaps one difficulty to their making sound decisions is their dislike of large doses of unvarnished truth and their liking for a good show or interesting hokum. An example of putting on a good show is the election in 1927 of William Hale Thompson in Chicago. Thompson made a ferocious attack on King George of England, who he alleged was scheming to get possession of the country. This no doubt influenced many unthinking voters.

Presidential campaigns. One of the strategic faults of many college football teams is that after they have made a touchdown in the early stages of the game and are leading their opponents, they attempt to protect a six-point lead, and adopt a cautious, conservative style of play instead of continuing the slashing attack which brought their original score. Protecting a lead by conservative play is an accepted practice in politics, however. In past presidential campaigns incumbents have refused to commit themselves on points where there was a serious division of opinion, leaving the campaign largely to party organization and machine politics.

In the presidential campaign of 1924, for instance, Mr. Coolidge avoided making any utterances which could possibly offend a single group. He ignored live issues of the fight, holding to an advocacy of economy, lower taxes, debt reductions, prosperity, peace, good-will, and other obvious and non-disputatious subjects. Of course, this, like many other political concepts, was blasted by the depression. It is true that prosperity absorbs all criticism, and that in a period of industrial prosperity the party in power, if normally the majority party, is almost invincible. However, the reverse of this picture is equally true. For the party in power there is no greater menace than a severe slump in business. Obviously then, a policy of inactivity for a party in power during a business depression is suicidal.

Psychology of the New Deal. It is interesting to look at some of the psychology of the New Deal, because of the Roosevelt administration's unusual proficiency at times in swaying the mass of people.

A desire for change is perhaps a natural desire of the mass of the electorate if it has been through a period of great stress. The notion that a *tabula rasa* is a prerequisite to happier times after great domestic disturbance is not new in this country. Democrats were swept out of office after the World War, and it was almost a foregone conclusion that the Republicans would become the opposition party at the end of Herbert Hoover's term. This desire for something new, at least for something different, was aptly expressed in the phrase, "New Deal."

Mr. Roosevelt entered office with the immense psychological asset of being almost a martyred president at the outset of his term. The day before the attempted assassination, the Michigan bank holiday had frightened the country, and banking systems in other states were beginning to collapse. One fact was of immense assurance to the people, however, the New Deal was soon to be theirs. Therefore they felt that the assassin's target was not only the president-elect, but also their very faith in the future. Minor discords were hushed in a paean of popular rejoicing at Mr. Roosevelt's escape.

The events of the first ten days after the inauguration were likened by Walter Lippmann to the second Battle of the Marne in the summer of 1918. The invading forces of depression had delivered their most terrible blow. The defenders had been driven back, their lines had been broken, demoralization was spreading, and a rout was threatened. Suddenly after unified command and with fresh troops the offensive of the enemy was held, the defenders' lines were reformed, morale was restored, and the defenders found themselves in a position to begin a counter-offensive.

Opinion becomes divided. The great good-will which President Roosevelt and his administration enjoyed at the beginning of their term began to slip away from them even during their first year in office. The so-called "reform" activities of the administration alienated many of those at whom the reforms were aimed. There began to develop a serious division of opinion on such government policies as currency, agriculture, regulation of industry under codes, public utilities, relief expenditures. This division of opinion was caused chiefly by the fact that people's self-interests came to be affected in ways which they considered to be harmful. Then there were others who professed no selfish interest in the effect of administration policies, but stood on grounds of patriotism, and declared that the increasingly strong centralization of power in Washington amounted to subversion of the Constitution.

Take the case of the National Recovery Act. This effort to rid industry of the evils of unfair competition and to regulate industry was started with great publicity under an organization almost identical with those organizations for drives and propaganda created during the World War. Blue Eagles were set screaming throughout the land, and communities staged NRA parades. In New York City the parade was the greatest mass demonstration the city had ever seen. On September 13, 1933, some 250,000 civilians, enjoying a half-holiday, marched up Fifth Avenue from 1:30 o'clock in the afternoon till 11 at night. Then the parade had to be stopped; it was said that if it had been allowed to continue it would have lasted another six hours. There were tears and laughter, shouting and music—a perfect example of mass emotion. Two million spectators cheered.

Soon, however, it began to appear that the Blue Eagle could scratch as well as scream. The codes were criticized as being unduly oppressive to some shopkeepers, as fostering monopolies, and discriminating against the small manufacturer. The federal centralization of power began to disturb others than Alfred E. Smith, who referred to "the heavy, cold, clammy hand of bureaucracy." Then on May 27, 1935, by unanimous decision, the Supreme Court of the United States declared that the NRA was unconstitutional.

A few days later President Roosevelt served notice that in the light of the Supreme Court decision on the NRA, the New Deal would go direct to the people for power to centralize in the federal government authority over many of the economic and social measures now controlled by the states. Mr. Roosevelt called for a national referendum to see whether he or the Supreme Court represented what the people wanted. The president declared that the dictum of the Supreme Court returned us to the "horse and buggy days" of the country. This raised another great question of public opinion to decide: Should the Constitution be amended to give more power to the federal government at the expense of the states? This seemed to be vital for the success of New Deal policies and the success of the Roosevelt administration. It was still an issue in the summer of 1936 as the presidential campaign gathered pace.

Government vs. the utilities. A great battle to influence public opinion was fought in 1935 between the government and the public utility companies over the Wheeler-Rayburn Bill to eliminate and regulate public utility holding companies. It was charged by the utilities that this legislation was inspired purely by political motives, by the old political maxim that the utilities or the "power trust," as the politicians always phrase it, can be attacked with impunity, and that such attacks are sure to win not only the sympathy of 25,000,000 users of electricity and 15,000,000 users of gas, but also of many of the holders of utility securities which had declined disastrously during the years of depression.

The administration told voters that utility holding companies should be eliminated because they "milked" the operating subsidiary companies—loading on these companies huge expenses which the subsidiaries had to pass along to the customers in the form of higher rates for gas and electricity.

Utility companies also made an appeal to the self-interest of their security holders and customers. They declared that if holding companies were forced to dissolve, there would result a loss of billions of dollars in the ruin of holding company securities held by millions of investors.

A few weeks before the bill was finally passed, Senate and House committees were appointed to investigate the so-called "power lobby." The result of these investigations was partly to discredit the fight waged by the utility companies, and to help make possible the final passage of the bill. The whole administration of the provisions of the act was tied up in litigation toward the end of 1935.

Causes taken directly to voters. This example is valuable not only because it indicates the methods used by an administration to gain popular support for an important part of its legislative program. It also illustrates methods adopted by a powerful industry to protect itself against such legislation. The whole story is of further value because it indicates clearly the most modern methods of influencing legislation. In former times legislation was almost invariably influenced by swaying directly the opinions of individual legislators. That is, representatives of special interests would actually attend legislative meetings and talk with legislators, stating their position and the position of their clients in no uncertain terms. This method is no longer deemed to be most effective. Now appeals are carried directly to the electorate, on the theory that they in turn will get in touch with their representatives and demand that these representatives vote in the fashion desired by the special group.

Government publicity. Some hint has been given of the means used by the government to influence political opinion. Frank R. Kent writing in his syndicated column "The Great Game of Politics" in the *Wall Street Journal* of May 3, 1935, declared:

> In any event, as clear as possible understanding of the facts seems important to the people. The outstanding fact is that no Administration in history ever remotely approached this one in the number of publicity agents employed; the quantity of speeches produced; daily, weekly, and monthly syndicated material written by its members; the degree to which the moving picture industry is utilized and the radio dominated. And finally, there is a striking editorial by David Lawrence, in the *United States News*, entitled "The Freedom of the Air." In effect, Mr. Lawrence charged that there is practically complete federal censorship and control over the broadcasting companies. This is exercised through the Federal Communications Commission, members of

which are appointed by the President, removable at will, and have, through the six months licensing system, power of life and death over the broadcasting companies.

CONCLUSIONS

The conclusions which we must draw from all these examples of influencing political opinion are that this influence is generally exerted by groups which have special selfish interests, whether these interests be as broad as that of a national political party or as narrow as that of an industry or group seeking special legislation. It is also obvious that this influence is exerted through presenting to the public only part of the picture; that is, the party in power attempts to persuade the voters that its side of the story is the whole truth or the particular group or industry attempts to persuade the electorate that the weight of truth and justice is assuredly on its side of the question.

The history of democracy is the history of influencing public opinion. The student of popular movements in America, for instance, can see how political opinion has been influenced during the course of such movements as slavery, free silver, woman's suffrage, prohibition, trust-busting, the many agrarian movements, and every political campaign.

One principle stands out: that people are moved by appeals to their self-interest and to their emotions more than by any other appeals.

This is of vital interest in the conduct of democracy. For after the passage of generations, the main problem which faces the voter today is not one of securing more power, but of knowing how to use the power which he has secured. In the United States there is no alternative to popular judgment as the basis of government. Therefore if democracy is to survive and flourish, it is vital that these judgments be correct.

The hope of democracy lies in fully realizing the truth that the voice of the people is by no means the voice of God, and that its decisions are more likely to be based on ignorance, prejudices, and passion then upon intelligent consideration. It has been said that democracy is all sheep with no shepherd. Democracy cannot depend for its leadership upon groups with special interests; however, there are a few groups whose interest is primarily to promote the common good.

The dangers of propaganda and the control of public opinion lie in influencing this pliable mass of public opinion into decisions which favor one group at the expense of another, or into decisions based upon short-term emotional wants rather than upon long-range constructive good.

If people are kept aware of the agencies which are trying to influence their opinions, if they are encouraged to peer behind the veils of propaganda, they will perhaps be less likely to make decisions unfavorable to their own interests.

MEDIA OF CONTROL

Control of public opinion rests largely upon organization. Interested groups aim to gather as many sympathizers as possible into well-knit organizations, so that the weight of these people's opinion may be thrown effectively into desired directions. Persons like to belong to societies and organizations, especially if they get buttons to wear or shingles to hang on their walls.

A glance at a *World Almanac* shows hundreds of associations and societies which are concerned with influencing people's opinions on all manner of subjects. At random, one picks out:

American Birth Control League, Inc.
American Federation of Labor
American Legion
American Society for Advancement of Atheism, Inc.
American Society for Prevention of Cruelty to Animals
Anti-Profanity League
Anti-Saloon League of America
Brewers' Assoc.
Carnegie Endowment for International Peace
Chamber of Commerce of the U. S. A.
Civil Liberties Union
Crusaders, The
National Association of Cotton Manufacturers
National Consumers' League
National League of Women Voters
Navy League of the U. S., Inc.
Non-Smokers Protective League of America
Save-the-Redwoods League
Simplified Spelling Board
Women's Christian Temperance Union

Such organizations attempt to focus people's combined energies, ingenuities, and other resources on desired objectives. The sources and interests of propaganda or the influencing of public opinion are almost always organizations and not individuals. Today, as never before, organizations can easily be made national and even international in scope. This is due to modern means of communication.

In considering modern means of communication one must consider railroads, automobiles, busses, airplanes, foreign travel, radios, broadcasting stations, telephones, motion pictures, the drama, newspapers, magazines. There are also books in different forms: the novel, the drama, the poem, the essay, the fable, the treatise. There are orations, slogans, stunts, cartoons, statistical tables.

It is easy to see how potent these weapons may be in controlling public opinion. For example, there are 22,869,000 homes in the United States with radios; 74 per cent of all families own radios. Political speakers or others having causes to advocate can enjoy audiences of more than a few thousand now; they can speak over one of the vast national networks and reach into millions of homes.

Then there is the printed word. People get most of their political and economic education from newspapers. In 1936 there were 1,938 daily newspapers with a total circulation of 38,442,793 and 514 Sunday papers with 28,299,871 circulation. There were also 10,505 weekly newspapers with a circulation of about 15,000,000.

Between the radio and newspapers, no one except hermits in our most remote hinterlands is safe from attempts constantly being made to influence his opinion.

American publishers in 1935 published 8,766 new books and 1,852 new editions. This compares with 8,342 new books and 1,845 new editions in 1929 and 11,671 and 1,799 respectively in 1910.

"Books that have changed the world." In this connection, it is interesting to note in the October 1935 issue of the *Wilson Bulletin* for librarians a list of twenty-six "books that have changed the world." *Uncle Tom's Cabin* is included because by its emotional appeal, dramatic force, and intense human interest it made the slavery question an imperative moral issue. Karl Marx's *Das Kapital* provided much of the theoretical background for socialistic programs. Charles Darwin's *Origin of Species*, called the most influential book of the nineteenth century, influenced every field of thought. Henry George's *Progress and Poverty* established the "single tax" doctrine which has found followers in every land. Thomas Paine's *Common Sense* probably contributed more than any other single utterance to bring about the final break between the colonies and England. Among other books included are Adam Smith's *Wealth of Nations*, *The Federalist* papers, Charles Dickens' *Oliver Twist* and *Nicholas Nickleby*, Immanuel Kant's *Critique of Pure Reason*, Thomas Hobbes' *Leviathan*, and William James' *Principles of Psychology.* Whether or not one agrees with these choices is immaterial; what is important is that all of them illustrate the tremendous power which has been exerted on public opinion through the medium of books.

Consider the telephone. There were 17,424,000 in use in the United States on January 1, 1936. This is more than half of the world's total of 33,540,000 telephones; there are more than 14 telephones to every 100 Americans, compared with 5 to every 100 in Germany and Great Britain. Nothing has done more to broaden people's horizons than the automobile. There were 26,167,000 motor vehicles registered in the United States in 1935, although this was a decrease from the 26,545,281 registered in 1930.

Any group or special interest which is trying to influence public opinion does not usually restrict itself to the use of any one medium, although the size of the purse may often be the determining factor. An organization interested in promoting world peace may have its speakers on the radio as well as on lecture platforms, it may send news releases and advertisements to newspapers, and have its publicity agents write stories for magazines and pamphlets to be sent to selected lists. It spreads much propaganda by word of mouth, and if there is pending legislation in which it is interested, it may flood Congress with letters, telegrams, telephone calls, and send personal representatives by streamlined automobile, streamlined train, or airplane, to Washington to buttonhole Senators and Representatives. If it wishes an advertisement in a newspaper across the continent in short order, it may telegraph it or send it by air mail or telephoto, which can transmit copy, regardless of distance, in ten to fifteen minutes. News, propaganda, opinion can be flashed over the world. Those skilled in the arts of publicity know how to make best use of these facile implements of communication and transportation which are now at their command.

Measures of Public Opinion

Since the business of swaying public opinion is of such vital concern to everyone in a democracy, it follows that it is almost necessary to maintain certain agencies which, like weather vanes, show how the winds of public opinion are blowing. These measures of public opinion have been particularly important in the last few years. Curiously enough, they had their origin in several cases not in the measurement of political opinion, but in the commercial investigations carried on by business firms for the purpose of ascertaining the degree of people's interest in advertising, the reasons for their use of particular brands of foods, their listening habits over their radios. This so-called commercial research, which set young women and men to ringing doorbells throughout the nation, developed a technique which, by 1935, began to be applied to questions of national political interest. Why wait for an election to find out how people feel about taxes, presidential candidates, utility rates? Such delay might cause much misdirected policy, much thwarting of the popular will, merely because of an ignorance in high places of the true state of public opinion.

In short, there are three techniques in this practice of sampling public opinion: the personal interview, the mailed ballot, and a combination of the two. *Fortune* magazine began to make these surveys of public opinion a regular quarterly feature in 1935. Its sample was 3,000 personal interviews. *Fortune* asked voters whether or not they were for the League of Nations, government ownership of railroads, payment of the soldier's bonus, what they thought about telephone rates. Dr. George Gallup, who had enjoyed much experience testing the habits of newspaper readers, began to publish national political surveys weekly under the name of the American Institute of Public Opinion. He surveyed the attitude of people on old age pensions, the reëlection of President Roosevelt, and similar questions of national importance. He used a combination of the personal interview and the mailed ballot.

Dr. Starch also began his *Polling America* in 1935. A pioneer in commercial research, he restricted his sampling to personal interviews by a staff of interviewers spotted in representative areas throughout the country. These signed articles appeared weekly in many metropolitan newspapers. His interviewers reported national sentiment for and against the New Deal, felt the national pulse on taxes, and asked voters their choice for Democratic and Republican candidates.

The *Literary Digest* restricts its straw votes to mailed ballots, and depends for its accuracy upon the large sample it takes, the number of ballots mailed being equal to about one-fourth of the total presidential vote. The *Digest* poll has been conspicuously accurate in forecasting the results of past presidential elections.

These polls have all helped to perfect the functioning of our democracy. They have made the elected representatives of the people more responsive to popular will because they have kept them better informed about national sentiment on important issues. A Senator no longer needs to wait until he stands for election or until he returns home after sessions and talks personally to his constituents. He can get reliable information about what voters think while he is still in Congress and while he still has time to alter his stand on national questions. This makes representative government more effective.

Questions for Yourself:

1. Name three books which have seriously affected your outlook on life.
2. Is your thinking on college matters affected very much by the editorials in your college paper?
3. In political campaigns, which do you think has the greatest influence on the voter: the candidate, the party platform, or the record and tradition of the party itself?
4. Do you believe the press should be censored in wartime?

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CHAPTER XXVI

CONTROLLING BEHAVIOR THROUGH RELIGION

From time immemorial man has been trying to understand that which is beyond his knowledge. Although man's experience constantly widens and his store of information steadily increases, he realizes that there is a great unknown beyond his ken. The attitudes and beliefs which he develops to adjust to this seemingly vast and powerful unknown may cause him to behave in ways which are recognized as religious. That this behavior should vary greatly and differ widely from group to group in equally diverse environments is to be expected. That these attitudes and beliefs do not remain abstract ideas but attach themselves to objects and become incorporated in institutions and specific behavior patterns should be equally expected. Hence the great variety of religions recorded on the pages of history, each an attempt to bring the unknown into concrete form with sufficient stability to be controlled or to act as an agent of control.

Religious Behavior

The unknown which provokes religious modes of behavior is almost universally regarded as something having power to interfere with or even direct and control individual activity or well-being. This power, being unknown and therefore unpredictable, is a source of fear; but if it can be propitiated by appropriate activity on the part of the individual it can be made an ally to be reverenced, prayed to, worshiped, and loved. The emotional and affective elements are exceedingly important parts of the experience recognized as religious, and must always be reckoned with in any attempt to understand religions and religious behavior.

If this supernatural power can be encompassed within the concept of God or gods, it focuses the individual's efforts toward propitiation and control. Thus the concept of a Supreme Being seems a logical concomitant of many religions, and, in a less personalized form, of much religious behavior. In his efforts to achieve rapport with this power beyond the natural world of sense perception and experience, civilized man has learned to recognize values beyond those essential to mere living on an existence plane.

Man learns these higher values in various ways and seeks to achieve and live according to them through diverse methods and institutions. This search for the good life, either here or hereafter, is a common thread running through all patterns of religious behavior, whether these patterns are woven from the known and demonstrated aspects of nature, from the unknown or wished-for elements of the supernatural, or from a combination of both. What man conceives to be the good life is quite as varied as the methods he employs to achieve it. The religious recluse immured in his Tibetan cell is seeking a satisfactory way of life quite as religiously as the penitent saying the stations of the cross, or the scientist looking for his solution in test tube or mathematical formula. Even those who most vigorously deny the tenets of religion are, as some would have it, by their very blasphemy recognizing the existence of that which they would deny, and making a religion of their very denial.

Thus we see that there are many ways in which people may be religious, and equally many religions wherein they seek to stabilize and perpetuate the values which seem most conducive to the good life. But we must not assume that all religious behavior is connected with religious institutions, nor that all behavior connected with churches, rituals, creeds, or doctrines is therefore religious. These assumptions are too rigid and narrow to fit the facts as we know them, therefore becloud rather than clarify our thinking.

The analysis of religious behavior in order to understand the human being is a legitimate mental activity for any intelligent person. It may be well at this point to emphasize again that to analyze phenomena does not mean disapproval of them, nor need the study of them be derogatory. Religious attitudes, beliefs, and practices are so charged with emotional concomitants that we are disturbed when they are subjected to impersonal scrutiny and analysis. They are so intimately a part of our personality that they seem sacred to us or even divine. If psychology is to help us understand human nature it must also examine such behavior classed as religious and in so far as possible explain its bearing upon adjustment. To explain, however, does not necessarily explain away. Conklin (1929) emphasizes this when in the following excerpt he advocates an "independent, detached, psychological attitude" as an aid to clearer thinking.

> There should be no danger from such an attitude of detachment except as some minds confuse explanation with explaining away. It should be obvious that the thing explained is not explained away. And yet some readers of the psychology of religion make the mistake of thinking that a religious custom or practice should be abandoned when it comes within the realm of the understood. Such a reaction is absurd in principle. No one would abandon a farm merely because the soil thereon had been examined by a chemist. On the contrary, one would proceed at once to farm the land more profitably. It should be the same with increased understanding of religious phenomena (p. 13).

Another preventive of clear thinking also in matters religious is the "nothing but" fallacy. As we study and acquire information we discover that psychology interests itself in physiological processes, therefore we falsely argue that it is "nothing but" physiology. We find that religion is stimulated by a recognition of the supernatural, and thoughtlessly assume it is "nothing but" a survival of superstitious beliefs. Such constricted thinking shows lack of perspective and inability to get far enough removed from isolated data to see their relationship to other concomitant factors. This is peculiarly apparent in much immature thinking and explains in part the illogical and faulty opinions so readily expressed by adolescents and adults who lack breadth of experience or knowledge. Accompany such fallacies with emotional aspects and they are even farther removed from clear and reasonable thinking. The fanatic carries this distortion of perspective to the extreme in his lack or disregard of accompanying factual data. A dramatic example is the religious zealot who would condemn to death and burning hell fire all who would not believe with him.

The origin of religious behavior. The universality of religious behavior has caused many to search for its origin. They would have it emanate from the divine and superhuman, and concern itself only with the things of the soul and spirit. This clearly is beyond experience, therefore regarded as beyond the experimental investigation of the student of human nature. However, as he sees everywhere the attempts of human beings to develop the good life in terms of their own life experiences, religious behavior takes on a concreteness which puts it quite within the legitimate realm of psychological investigation. The psychologist in considering religion as a form of behavior to be analyzed and described like any other human behavior is neither affirming nor denying metaphysical or superhuman concomitants, neither is he giving an ethical interpretation to his observations.

As may be expected, there is no complete agreement even among the empirical investigators as to the source of religious behavior. Some postulate a religious instinct, but when we attempt to apply the criteria whereby we seek to determine instinctive origin we find no clear-cut evidence to support the contention. Even the more dynamic concept of instinct as drive does not clarify; although various systems explaining the origin of religion, some of them most ingenious have been built about specific drives, such as sex and the drive for power or for security.

When we come to a consideration of attitudes and beliefs Conklin assures us that religious experience can result in a believing attitude which is essentially religious, when he writes that

> a belief about the nature of the world in which man lives, which fits the facts as he knows them and offers him an acceptable interpretation, one which appeals to him as worth living by and worth offering to others, establishes an attitude of believing and helps enormously to satisfy the drive for the continuation of comfortable living. With such an attitude and such a belief, man can live comfortably in his world; without it he is groping, struggling, trying this and trying that, always seeking, yet ever unsatisfied (p. 39).

He also holds the God concept as essential to religious behavior. This concept may be crude or vague, unformed and quite inexpressible, yet a concept of a god incorporated in a belief or religious attitude effective in life situations.

Other investigators have sought the origin of religious behavior in the hope, faith, and love of the Pauline concept. Some naïvely believe that by denying consciousness they have explained away religion. Others examine a single aspect of human life, for example, sex, so closely that it gets quite out of focus and distorts the picture of religious behavior. Not all these promulgations are good or clarifying, some quite the contrary; therefore it behooves one to read with clear vision and not be confused by faulty logic and biased conclusions. Considerable authentic data are accumulating, slowly to be sure, worthy of the classic work of James (1902) and that of Starbuck (1899) which clearly presented the concept that predominantly religious experiences may be analyzed, studied, and understood much as any other kind of human experience. Indeed, it might be well to examine a few excerpts from James' classic, *The Varieties of Religious Experience,* each of which, though taken out of its rich context, presents some thoughts which may be helpful in understanding the nature of religious experience and the great influence religion has had in controlling the lives of mankind.

> Summing up in the broadest possible way the characteristics of the religious life, as we have found them, it includes the following beliefs:
>
> 1. That the visible world is part of a more spiritual universe from which it draws its chief significance;
> 2. That union or harmonious relation with that higher universe is our true end;
> 3. That prayer or inner communion with the spirit thereof—be that spirit "God" or "law"—is a process wherein work is really done, and spiritual energy flows in and produces effects, psychological or material, within the phenomenal world.
>
> Religion includes also the following psychological characteristics:
>
> 4. A new zest which adds itself like a gift to life, and takes the form either of lyrical enchantment or of appeal to earnestness and heroism.
> 5. An assurance of safety and a temper of peace, and, in relation to others, a preponderance of loving affections (p. 485).

The peculiarly personal quality of religion. The search for the significant and enduring in religion is a personal one, and however much we may blend our objectives with those of the group, the good life we expect as the end result of our efforts is primarily for ourselves. However, our religion—religious behavior, if you prefer—is rarely isolated. We quickly make it a social activity even though we originally did not receive our religious beliefs from the group. Allport (1933) states that personal religion, as a development from our inner questioning and striving,

> is an intimate expression of a human personality . . . therefore the term God in its most vital and intimate sense is likely to mean something a little different for every person. The background of experience from which the individual's faith is projected is, moreover, so intangible and so rich with inarticulated feelings that it cannot be put into words. Hence we can never really know whether the values of another person and his impression of the deity are similar to our own. Religion of the personal type not only differs with the individual, but resists all attempts at its communication to others (p. 423).

Many individuals can take this personal religion into the institutionalized forms and places of worship and adjust it to the symbolism of the church with satisfaction and comfort, using creed and ritual as avenues for the expression of their personal religious beliefs. Others may keep the two quite separate, employing each for the specific satisfactions it may bring.

However, the order given here, developing a personal religion and then making it into a social one, is perhaps the experience of relatively few. The doctrines, creeds, rituals, and faiths of group religion probably have been educated into your religion in childhood. Your problem then may be to fit a somewhat rigid institutional religion into the scene with apparently antagonistic knowledge. It becomes a problem of adjusting each to the other, or of relegating our beliefs to logic-tight compartments where incompatabilities may be ignored. This latter method is not the way of mature adjustment, however, but it may need to serve until you have gained experience and knowledge as well as the essential self-control over emotional and mental activities to revise your beliefs more in harmony with each other.

Doubt does not destroy religious behavior in the well-adjusted personality. It is perhaps during late adolescence and early maturity that conflict between "given" knowledge and acquired knowledge is most acute. It is during adolescence that the individual becomes a social being who extends his personality to incorporate more vitally the outer world with his inner world. But it is during this period of development too that the "nothing but" or the "all or nothing" fallacies are most apt to distort perspective. Or the adolescent may be so disturbed by the doubts which he interprets as sin that he will grasp at doctrines and faiths of others to give him the sense of security in law and order which he craves. Thus constructive doubt, which is at once the sign of and stimulus for intellectual growth, may be replaced by rigid and uncompromising criteria, for hand in hand with youth's tendency to doubt also goes the tendency to be dogmatic, particularly about group-approved tenets. The more eager the youth is to belong to the group, the more dogmatic and even fanatical he will be in asserting and defending its tenets.

Yet honest doubt may for many lend new insight and lead to enrichment of personality. Josey (1927) in pondering the question of why doubt should in some cases undermine character and paralyze the will and in others lead to new insight and depth of character, says in part that

> Past training must exert considerable determining influence on whether the effects of doubt will be good or ill. Whoever has been taught that morality depends on certain general conceptions of the universe may, on coming to doubt these conceptions, be led to give up his efforts to live morally. An individual who has been taught that God has certain definite attributes and characteristic ways of action may on doubting them come to doubt the existence of God. On the other hand, the individual who has been taught that morality is the way of life which the race has found to be most satisfying will continue to strive to live morally no matter what his view of the universe may be. And so it is with belief in God's existence and the other basic tenets of religion. On the other hand, one who has been taught that we cannot define God but that his nature is progressively apprehended as our sympathies and understanding grow is not upset when doubts begin to undermine the conception of God that he has been holding. For that outgrown conception he slowly substitutes a new one that is more adequate and more completely in harmony with his new insight (pp. 171–172).

Doubt should be regarded not as a sin but as a tool which man may use in fashioning a philosophy of life, adequate to serve him not only from day to day but in life's crises as well. Such a philosophy cannot be presented as a gift but must be developed from the experience and knowledge of the person. The "givens" of religion must become a part of the individual way of life if they are to have value. Some representatives of religions influence the individual by discouraging the doubt and questionings of their communicants. A tenet often emphasized by an institutionalized religion is that to avoid sin, and to propitiate the unknown and unseen powers, one must have an unquestioning faith.

Control through Institutionalized Religion

Whenever an activity or a belief can be crystallized into an objective symbol, that symbol then can be substituted for the thing itself and used as an instrument of control far from the scenes and conditions of its origin. A way of life is formulated into a creed which we incorporate into our behavior as a thought habit. But unless the belief stimulates activity toward bringing about greater personal satisfaction, it becomes a mere formality. We make the creed a magic formula or regard it as a sacred object, forgetting or never knowing the reality which gave it form. We lose the essential way of achieving the good life of the Man of Galilee in the doctrines, creeds, and rituals of the symbolized Christ; the advantages and values of abstinence in the taboos and sanctions of the formalized cult. But however much the objective formalities may be important to a religion, they alone cannot keep it together, to endure they must be backed by religious beliefs of the communicants. Remove what the religious symbol stands for and the symbol loses its sanctity and at the same time its power to control. For example, the non-Christian reacts to the symbol of the cross quite differently from the Christian.

On the other hand destroy all the symbols, yet the essential religious behavior, which aims toward the satisfactions of the individual in the good life he imagines, will survive. Russia is attempting such an experiment, but it remains to be seen whether they have been able to destroy religious behavior with institutionalized religion. History records no completely religionless groups. Russia's experiment has not yet reached enough stability to know whether she will make a religion of Communism itself, or permit another religious form to develop. One wonders if the atheists in their zeal for godlessness are not after all worshiping their denial of religion as a god of their own making.

The Russian church had no doubt become too rigid and unwieldy to meet the sudden change necessary in the crisis. It had controlled and directed the lives of masses of people and had taken upon itself powers and prerogatives far beyond its original religious intent. This is merely cited as an example. Other religious institutions have done much the same. Such institutions have made themselves the arbiters of morals, of ethics, and of governments. They have used education and force to inculcate a belief in the importance of their part in bringing the good life to their communicants.

The power of religion has been felt in every phase of organized social activity from that of home to national government. The family, which is in miniature the sum total of all institutions, is a different organization when religious aspects are prominent than when they are submerged. Religion normally begins at home, therefore the religious organization which can inculcate its doctrines there will be able to control more effectively the behavior of its communicants. By indoctrinating the children it also assures its own perpetuation.

Religion frequently has produced cultures by taking upon itself much that is not strictly religious belief and ritual. The Jewish culture is an example. The Jewish people are in reality "a distinctive culture organized around the Jewish religion," according to Dunlap (1934). Allport (1933) in discussing the God of the Churches also suggests in the following excerpt the great influence the institutionalized religions and those who administer them may have upon human behavior.

> The Church . . . serves well the communicant who wishes to place the burden of his thinking upon another and as he believes, more competent hands. Also a feeling of security and satisfaction in belonging to so old and great a fellowship as the Church affords. It is significant, however, that this doctrine should also have proved itself so well suited to the aims, and perhaps to the unconscious desires, of churchmen. The potentialities which it holds for acquiring prestige and power are great. It has endowed many with an authority quite out of keeping with their talent or their capacity for leadership; while at the same time it has invested them with special immunities. . . . For centuries the symbol of the Holy Catholic Church could be used to defy the authority of monarchs and even now it is significant politically in many parts of the world. Protestant ministers too, though lacking support of an ancient tradition, wield considerable influence through their slogan of a Church Militant, soon to become a church triumphant. The shrine, the altar, the sacred objects and vestments, the rituals, the words of scripture, the music, and even odors of church worship have become stimuli for conditioning the most profound emotional responses of life. The enduring character of these symbols and the feelings centering about them seem to proceed from an institution which is timeless and universal. The sacraments, solemn ceremonies which are frequently associated with the most crucial events of a human life, have within them a profound possibility for the control of human attitudes (p. 430).

History records that the organization of the church often was such that it permitted the promotion of the interests of a single group. This class as custodian of religion had power to direct church influence in many ways not religious. The power of the oracles at Delphi to control Greek political affairs; the bestowal of divine right upon kings, with a surprising amount of worldly goods involved; and the holy wars and crusades, ostensibly to extend the Kingdom of God but strangely also always extending some worldly kingdom, are well-known examples. The use of the power of religion to augment and support political power is by no means unknown today, though the methods have become for the most part more subtle and adroit.

Modern life, however, comes less under the control of the special priestly class as many of the practices, enforced by the church in more primitive life, become social institutions quite separated from church authority. The state by taking over governmental and other institutions now attempts to regulate through its laws many social relationships originally controlled by the church. But just as the religion of the ancient day found that its commandments were effective only as its communicants believed them and incorporated them in their life patterns, do our governments find that its laws are effective only as its people make them so. As the individuals constituting any society become more able to develop their attitudes by principles rather than through subservience to arbitrary injunctions, the nature of the various institutions will naturally change. The church institution in order to survive must also change to meet the wants of its constituents. It has done so in the past and may be expected to do so again. Unnecessary and artificial ceremonials may be changed or discarded, but that part of human life which cannot be dealt with on purely rational terms will yet be its primary concern.

Judd (1926) emphasizes the persistence of religion in human affairs when he states that

> Modern man . . . finds himself more or less controlled by social conventions in spheres of thought which lie outside of rationalized thinking. One may be ever so skeptical about a localized heaven, but one's thought will always revert to the word and the idea. It is safe to say that there is not a modern man or woman who is not influenced to some degree in his modes of thinking by the religious doctrines accepted in the community in regard to an after-life of bliss or distress.
>
> Religion can be variously defined. It is in part everyday behavior. As such it is the root from which have grown many of the clearly differentiated ethical and governmental institutions of modern life. Again religion must be thought of as a body of coöperative efforts to solve the mysteries of life. As such it will persist so long as the experiences of men carry their thoughts beyond their powers of complete explanation (p. 269).

These various authors have been quoted, first, to serve as a starting point for the student wishing to examine more fully the religious beliefs of others, perhaps as a possible aid for his own religious orientation; and second, to show that questioning the varied outward forms of religion does not necessarily destroy that which is essentially religious. To understand religious beliefs or to know them as habit patterns of thinking or conduct grown out of human needs and desires, does not therefore make the belief wrong or a matter to be discarded. However, should the habitual religious behavior need to be revised in the light of broader knowledge or more mature experience, the person who understands religious behavior and the part it plays in human affairs can make the adjustment more readily. There may be discomfort and uncertainty for a time, such as may result from the revision of any habitual way of acting or believing. Emotional factors may make the shift more disturbing, but for the most part, the usual technique of habit revision is effective. Substituting a more satisfactory and adequate pattern for the one to be changed is good psychological procedure also in matters religious.

Religion and Adjustment

Religion concerned as it is with spiritual values plays a vital rôle in human adjustment to the exigencies of life. Because it "gives man that which he can get no place else in such great abundance—hope and faith, both wholesome, human values"—it touches all lives in greater or less degree. Dorsey (1935) makes also the following comment, which suggests the importance of religion in behavior hygiene.

> *Religion has a basic anthropomorphic origin.* Religion has biologic value for the person. Prayer is helpful work. Again it is well said: "I am come that ye might have life and have it more abundantly." Some early positive form of spiritual guidance constitutes an invaluable integral part of a person's orientation. Although this claim is true for all, it is particularly true for that great fraction of humanity consisting of likely candidates for the abnormal behavior clinic. Too often well-meaning parents arrange for their children to have heavy braces for their teeth or limbs but put forth little effective effort towards bridling their uncertain impulses or satisfying their youthful yearning for spiritual nourishment (p. 448).

The difficulties students sometimes meet in adjusting religious beliefs to new knowledge arise when they discard the values inherent in the old belief along with the particular dogma or ritual, and attempt either to substitute nothing for that which is discarded, or to substitute an inadequate belief which does not incorporate essential values. For example, some people doubt the divine origin of the commandment "Thou shalt not kill," and therefore with faulty logic consider themselves not bound by the essential verities inherent in the law itself. A respect for life gets its essential value from the needs of the individual and society rather than from some supposed origin. The individual who recognizes and respects the sacredness of the life of another is behaving religiously even if he follows no religion and worships in no church.

Communal activity is a potent factor in the control religion manifests over human behavior. Public religious worship proceeds through the activities of singing hymns together, standing, kneeling, and sitting together, repeating prayers and credos together, which readily pass over into the activity of thinking together. As the religious leader raises his voice in prayer or exortation, the worshiper is ready to blend his thinking with that of the speaker and follow suggestions as the group engulfs him and he feels himself a part of it. If communal worship has been well designed, it will heighten emotional aspects while increasing the feeling of assurance and security by reaffirming essential values whereby the worshiper hopes to achieve the satisfactions of the good life. The enthusiasms generated by common activity are a most important factor in determining the extent of the control wielded by organized institutions of religion. Religion viewed thus is primarily social in direction but it has a profound influence upon the individual through his beliefs and attitudes.

Religion is a part of social organization that will affect your life in some manner, therefore you cannot merely ignore it and expect to live comfortably. Anything as powerful as that simply will not be ignored and each must make some adjustment or adaptation to it as best he can. Changes are coming as they have been coming since man emerged. Those we see about us may seem overwhelming because we view them obliquely or too closely, or they are forced upon us before we are mature enough to think them through.

Perhaps we see religion resolved into a set of dogmas and doctrines instead of a way of living. Perhaps we seek some specifically religious experience instead of the religious quality which may be found in many and varied experiences. The religion we know may be founded on fear rather than understanding and belief in life values. Let us look for a moment at a few excerpts from the rich store of religious thinking Dewey (1935) has brought together to delineate a *Common Faith.*

> All religions, marked by elevated ideal quality, have dwelt upon the power of religion to introduce perspective into the piecemeal and shifting episodes of existence. Here too we need to reverse the ordinary

> statement and say that whatever introduces genuine perspective is religious, not that religion is something that produces it. There can be no doubt . . . of our dependence upon forces beyond our control. . . .
>
> But every crisis, whether of the individual or of the community, reminds man of the precarious and partial nature of the control he exercises. When man individually and collectively, has done his uttermost, conditions that at different times and places have given rise to the ideas of Fate and Fortune, of Chance and Providence, remain. It is the part of manliness to strive to direct natural and social forces to humane ends. But unqualified absolutistic statements about the omnipotence of such endeavors reflect egoism rather than intelligent courage (p. 24).
>
> But the *function* of such a working union of the ideal and actual seems to me to be identical with the force that has in fact been attached to the conception of God in all the religions that have a spiritual content; and a clear idea of that function seems to me urgently needed at the present time (p. 51).

Although Dewey's discussion is primarily philosophical, it is also fundamentally psychological, for emotions and intelligence operate in forming our beliefs, attitudes, and motives, whatever their ethical or moral implications may be. Psychology in attempting to understand the *whole* man may as well concern itself with the kind of philosophy of life he possesses as with the chemistry of his thyroid glands or the pros and cons of nerve conduction. It is sound psychological procedure to gather facts and information from every available source, therefore the experiences of others are legitimate fields of investigation, whatever such investigation may be labeled.

That religious behavior need not be incompatible with scientific search for truth although it may question the rigid formulas of institutional religion is suggested in the following excerpt from Eddington (1929) who finds in religion "a kind of sureness which is very different from cocksureness."

> In justifying the place of religious experience in human life, we have not to consider it from the point of view of propagating a creed. We do not send missionaries to the blind to persuade them that it will be to their benefit to believe that a world of light and color exists for other men gifted with eyes. We should not argue with the blind man who maintained that sight was an illusion to which some abnormal people were subject. Therefore in speaking of religious experience I do not attempt to prove the existence of religious experience, any more than in lecturing on optics I should attempt to prove the existence of sight. What I may attempt is to dispel the feeling that in using the eye of the

> body or the eye of the soul, and incorporating what is thereby revealed in our conception of reality, we are doing something irrational and disobeying the leading of truth which as scientists we are pledged to serve (pp. 48–49).

Thus we might well examine the religious beliefs of any number of persons who have amassed knowledge and experience and have thought through them to some adjustment toward the unknown. They have formulated values and beliefs which serve to motivate living toward hope and enthusiasm rather than despair and futility. Where objective experience and knowledge have stopped they have drawn upon spiritual values, which have vitality and existence but no palpable or measurable form. These values have not always been attached to or objectified in the forms and appurtenances of institutional religion, but they have been none the less motivating forces in daily living.

The man of less knowledge may be more directly controlled through the objective evidences of religion and the pronouncements of its ruling class, but because this has been so in the past is no guarantee that it will or should continue thus. The man of little education demands of his religion the satisfaction of needs and desires and expects it to give him assurance, security, and happiness. His objectives thus involve the same goals as those of the man of knowledge, although the way to those objectives may be quite different.

This chapter is not an attempt to present a psycholgy of religion, nor a philosophy of life, though either or both may be suggested. It has attempted to show that religious qualities of experience are among the psychological concomitants of life which either directly or indirectly control human behavior. Religion, objectified in the many churches and religious cults and practices, is man's attempt to use this controlling influence for what he conceives as better life. The beliefs developed about values of life which have to do with hopes and aspirations have always been used as controlling agents. "By their faith shall ye know them" epitomizes not only the revealing quality of man's faith, but the means whereby or avenues through which he may be controlled as well as control his own behavior.

Human beliefs, being thought habits developed from knowledge and experience, obviously influence the design of the behavior pattern. Religious beliefs play their part in the total design just as do economic, social, moral, or any other beliefs, and their influence must be considered not only in the life pattern of the individual but of the social group. As a means of controlling and directing human behavior, the religious values have been tremendously important in the past and show every evidence of continuing to be important in the future. Religion may be expected to control human behavior in some form and to some extent as long as knowledge remains unlimited.

Questions for Yourself:

1. What is your reaction when you discover a discrepancy between something you believed true and factual data gathered from scientific studies?
2. Can you control your thinking to withhold judgment until you find a better basis for your conclusion?
3. Can you cite an example of religious beliefs which you are confident have controlled the behavior of a person or group?
4. Suggest a way in which religion can play its best part in directing behavior.

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CONCLUSION

CHAPTER XXVII

THE ART OF LIVING[1]

In my years of teaching in universities and consulting in business, the two questions most frequently asked of me by young people have been:

1. What shall I go into?
2. What is the best way to get into it?

After being asked these questions many times, and after struggling for several years to answer them, I found that I usually made three statements. In answer to the first question, What shall I go into, I usually said:

> First of all, remember you are not looking merely for a job; you are building a career; you are molding a life.
>
> Second, do what you would most of all like to do, what you would most genuinely enjoy doing.

In answer to the second question, What is the best way to get into it, I usually made my third statement, namely,

> It does not make much difference how you get into it so long as you get a start.

I have given this advice on the ground that within broad limits any occupation which one may be capable of pursuing successfully offers as good an opportunity as any other. Any person with suitable ability and effort can earn a comfortable living in almost any occupation. The important question, then, is to choose work which you would really enjoy. Not only will that contribute to happiness throughout your life, but it will incline you to put forth your best efforts. The reason for my third statement is that what you accomplish depends 80 or 90 per cent upon yourself. It makes very little difference how you start so long as you start; after you once have an opportunity to start, it all depends on you. Your ability and effort nine times out of ten will ultimately land you where your capacity and industry warrant your being. You have a job only if you make a place for yourself. There are two classes of persons in any organization: those who have made a place for themselves and those who have not. The latter group fortunately is small. Just to be on a pay roll does not mean that you have a job unless you have made a place for yourself. The best test that the management of an organization can apply is to ask with reference to you: If you left would you have to be replaced? I have seen many young persons start in an organization with no particularly important duties assigned to them, but in a short period of time they had made themselves indispensable. I have also seen many young persons start in a job with full-time, well-defined duties. But gradually these duties vanished one by one because the persons assigned to them did not assume responsibility for them, to say nothing of adding new duties or doing the work better.

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[1] This chapter is written by the senior author and, because of its direct and personal nature, is written in the first person as an address to students and readers.

The important thing is not the job; not how you get into it; the important thing is the career, the life that you are building. So I want to talk to you about the Art of Living.

It seems to take a lifetime to learn how to live. Can we not make the crystallized wisdom of past generations available to everyone early in life? Norman Douglas in *South Wind* said that the essence of living can be distilled into fifty platitudes. If so, what are they?

We have not advanced much in the mental arts and sciences since the early days of the great thinkers and writers. We have made little or no advance in the wisdom of living since Buddha, Socrates, and Jesus. We have advanced far in the physical arts and sciences and have added a great deal to the comfort of living, but we have not added much to the art of living. Science and technology have given us better external circumstances in which to live. They have raised the standards and the comforts of living. They have given us better understanding of health and more conveniences for controlling sanitation.

The best guides to the art of living today still are expressed in the wisdom of the ages. Our scientific contribution has been hardly more than a mere corroboration here and there of the truth of that wisdom. Psychology has given us a better understanding of human nature, but the basic wisdom of how to live has not been improved materially for 2,000 years. Science and technology have merely added some refinements.

With the help of many persons, I have here put together some of this wisdom. I shall point out how it is being corroborated by the science of psychology.

When Norman Douglas said that the essence of life can be distilled into fifty platitudes, he probably had made no analysis to see if that was so. According to a study to be described presently, he was right in assuming that the number is small. It is, however, not fifty; it is only seven or eight.

On what basis can we say that there are only seven or eight basic principles of conduct? I asked fifty persons in various walks of life to give me a list of their favorite statements, quotations, or maxims, which they had found valuable for conduct. I obtained approximately 300 statements. According to the judgment of three persons, this number was reduced by eliminating the less significant ones to a selected list of 96. These 96, without giving sources or names of authors, were submitted to 600 persons who were asked to check the twenty-five more significant and valuable statements and to double check the five most valuable ones.

The 600 persons were composed of a general group of 110 individuals, 57 men and 53 women, representing a wide cross section of the general population, such as business executives, clerks, stenographers, professional persons, and housewives; 31 psychologists—16 men and 15 women; 10 ministers, men; 8 distinguished philosophers, men; 51 college students—30 men and 21 women; 65 unclassified persons; and 325 teachers, principals, and superintendents of schools—136 men and 189 women, who were attending summer session courses at various large universities. The results of these groups in the main agreed so closely with one another and with the original general group of 110 persons that they are all combined here into one set of figures.

The choices obtained from the 600 persons were then compiled by giving one point to each single check and five points to each double check. These preference scores revealed approximately twenty-five outstanding statements. These twenty-five statements with their preference scores based on the selections of the 600 persons are as follows—the figures in parentheses are the numbers assigned to them in the original list of 96:

Rank	Orig. No.		Preference Score
1.	(49)	Do unto others as you would that they should do unto you.	1,237
2.	(7)	Know thyself.	1,125
3.	(9)	Anything that is worth doing at all is worth doing well.	744
4.	(3)	If at first you don't succeed, try, try again.	719
5.	(83)	The great essentials of happiness are something to do, something to love, and something to hope for.	697
6.	(84)	The only way to have a friend is to be one.	637
7.	(12)	As a man thinketh in his heart, so is he.	615
8.	(42)	Knowledge is power.	615
9.	(57)	Actions speak louder than words.	579
10.	(26)	An ounce of prevention is worth a pound of cure.	564
11.	(95)	If you can't say good about people, say nothing.	562
12.	(29)	Life is what you make it.	548
13.	(52)	It is important to act, it is more important to think, but the most important thing of all is to think and act.	533
14.	(55)	Be calm and self-possessed, know what you are about, be sure you are right, then go ahead and don't be afraid.	509
15.	(48)	This above all: to thine own self be true, And it must follow, as the night the day, Thou canst not then be false to any man.	470
16.	(96)	True worth is in being, not seeming.	456
17.	(22)	Live and let live.	436
18.	(19)	To err is human; to forgive divine.	433
19.	(74)	The only way in which one human being can properly attempt to influence another is by encouraging him to think for himself.	414
20.	(43)	A good way to relieve the monotony of any job is to think up ways of improving it.	405
21.	(70)	Give to the world the best that you have and the best will come back to you.	386
22.	(16)	Self-trust is the first secret of success.	373
23.	(47)	Man does not live by bread alone.	361
24.	(51)	Where there is no vision, the people perish.	356
25.	(73)	A man's real limitations are not the things he wants to do but cannot; they are the things he ought to do but does not.	343

It appears, however, that even among these twenty-five statements there are several which have the same or similar meanings. In order to ascertain how many basic principles there are, I started with the one chosen by the largest number of persons; namely, the Golden Rule, and compared it with all the other statements in the list to ascertain whether its central meaning was similar to that of any others. I found that there were seven such statements among the ninety-six. For example, "The only way to have a friend is to be one"; or "Live and let live" mean fundamentally the same as the Golden Rule.

Then I took the second highest statement in the list, "Know thyself," and examined all the remaining statements and found eleven with a similar meaning. Then I took the third highest ranking statement, and so on. By this method I found that when all statements had been classified there resulted only seven basic principles. All of the 96 statements, with the exception of a few which were chosen by a mere handful of persons, were grouped under one or another of these seven principles.

Reciprocal Behavior

Two statements in our list stand head and shoulders above all the rest. One is from Jesus and the other is from Socrates. One is the Golden Rule and the other is "Know thyself." Let us think about the first for a moment: "Do unto others as you would that they should do unto you." This had a preference score of 1,237, according to the judgment of our 600 men and women. This placed it indisputably at the head of the list. It was spoken by Jesus, and according to Matthew He said, "Therefore, all things whatsoever ye would that men should do to you, do ye even so to them: for this is the law and the prophets." Jesus never wrote anything, so far as we know, except one time when he wrote on the ground. But His spoken words have become more permanent than any writing could have made them. The same thought has been expressed by others of the world's great thinkers—two actually before Jesus. Aristotle, some 350 years before Christ, put it, "We should behave to friends as we would wish friends to behave to us." Confucius, 500 years before Christ, expressed it in reverse—"What you do not want done to yourself, do not do to others." Let us call it the principle of reciprocal behavior. It was not discovered by science or experiment, but it was evolved out of the laboratory of experience of countless generations and adopted by the science of psychology because it is sound psychology.

After the term "reciprocal behavior" occurred to me, I discovered that Confucius had said, "Is there one word which may serve as a rule of practice for all one's life? The master said, Is not *reciprocity* such a word? What you do not want done to yourself, do not do to others."

We often mention distinguishing characteristics of man as contrasted with animals. We say that man is the reasoning animal, or the laughing animal, or the social animal, or the playful animal. It is probably just as true to say that man is the coöperating animal, the mutually dependent animal. In no species of animals does coöperation and interdependence play so large a part as among humans. In no species of animals is the period of infancy so long. Among animals mutual responsibility and coöperation are confined to a relatively short period in life, merely up to the time when the individual animal is able to get its own food. Later in life there are limited periods of coöperation in mating and caring for the young.

It is, therefore, reasonable that of all the pieces of wisdom for living, the statement best expressed in the Golden Rule should stand first. Basically it is a rule of fairness in dealing with others. Since so much of our lives depends upon others and is concerned with others and so much of our well-being depends upon others, the basic principle, therefore, is one of mutual fairness. In a genuine sense, this rule is appropriately called the Golden Rule, the rule of mutual fairness, the principle of reciprocal behavior, of doing unto others as you would have them do unto you.

If you want others to be fair, honest, and kind to you, be fair, honest, and kind to them. It is the principle of how to get on with others. It is the most inclusive principle of intercourse with others. Human society is nearly all intercourse with others, mutual control and coöperation. Treat others as you would like to have them treat you. It is the principle of "Love thy neighbor as thyself."

What does it mean? It is so obvious, so simple, that if you attempt to interpret it you find yourself merely repeating it in similar words. It is so universally applicable, no wonder it was chosen first on our list. It is so valuable in dealing with fellow humans, no wonder it is called golden. Perhaps 90 per cent of our behavior is concerned directly or indirectly with fellow humans.

Shakespeare, who was one of the keenest observers and analysts of human nature of all time, expressed the same thought in what is perhaps his most widely quoted statement:

> This above all: to thine own self be true,
> And it must follow, as the night the day,
> Thou canst not then be false to any man.

This has a preference score of 470 and is fifteenth in our original list of 96 statements. What else does Shakespeare mean if he does not fundamentally mean the same as the Golden Rule, the principle of fairness, of reciprocity in human behavior? If you are not fair with yourself, or true to yourself, if you are not honest with yourself, if you think you can get away with something on yourself, you will not be fair or honest with others. If you are fair and honest with yourself, you will surely be fair and honest with others.

In psychological terms, a given reaction toward others will elicit a similar reaction from them. If you smile, the other person will likely smile back. If you strike, he will probably strike back.

Six other maxims in our original list of 96 have fundamentally the same meaning and express different aspects of the principle of reciprocal behavior. They are as follows, in the order of frequency of selection:

	Preference Score
The only way to have a friend is to be one.	637
If you can't say good about people, say nothing.	562
Live and let live.	436
To err is human; to forgive divine.—*Pope.*	433
Judge not that ye be not judged.—*The Bible.*	329
A good deed is never lost. He who sows courtesy reaps friendship, and he who plants kindness gathers love.	242

Now you ask, isn't the Golden Rule outmoded in business? Do business men really pay any attention to it? Well, they have to pay a great deal of attention to it, if they want to get on in business. To be sure they may differ materially in the extent to which they observe it, but they probably observe it fully as much as people generally must in their non-business intercourse.

The principle of reciprocal behavior—of mutual fairness—is not in conflict with self-interest or the profit motive. A good trade is good for both parties to the trade. That is why businessmen must pay a great deal of attention to it. It simply means fairness to both and equal opportunity to both. Enlightened self-interest requires fairness to others, consideration of the interests of others. That kind of self-interest in the long run is likely to be the most successful for all concerned.

Self-interest is what makes the wheels go round in business. It is not the power plant down by the river. It is the self-interest of businessmen. That is what built the power plant in the first place. That is also what built the turbine in the power plant.

My friend, the Idealist, comes along and says to me: "You are just preaching the doctrine of crass selfishness, of paganism. You are merely preaching a return to the life of the wild man before Confucius and Aristotle and Jesus came along with the Golden Rule."

My answer is: "No, I am not. I am simply facing the realities of human nature and life. I am preaching that the truest and fairest form of altruism is a balanced self-interest and a balanced other-interest—an even balance between self-interest and altruism." It is like bookkeeping. Income and outgo must balance. Assets and liabilities must balance. The altruism which does not recognize this balance is merely mushy sentimentalism which may even be harmful to the person on whom the sentiment is bestowed.

I want to remind you that Jesus did not say, "Love thy neighbor," and then stop. He said, "Love thy neighbor as *thyself*." He did not say, "Do unto others," and then stop. He said, in effect, "Do unto others as you would that *they should do unto you*." In bookkeeping terms, fairness to you must equal fairness to me.

Psycho-Dynamics

The oft-repeated quotation from Socrates, "Know thyself," had a preference score of 1,125 and together with the Golden Rule is far above the next one in the list. The underlying thought in this injunction is to understand one's self and thereby understand others, in order to control one's own behavior and deal effectively with others. It emphasizes the value of understanding human nature. Let us call it the principle of psycho-dynamics. A similar meaning is expressed in the oft-repeated statement from Burns, "Oh wad some power the giftie gie us to see oursel's as others see us!" This had a preference score of 318 in our list of 96.

The world's great minds and great leaders had a most penetrating insight into the workings of human nature. They understood themselves and through that understood others. They were keen observers and analysts of the behavior of men. That was true of Aristotle, who first formulated the principles of habit in behavior and character. It was true of Jesus, whose golden rule in the sermon on the mount is the most basic guide of conduct ever spoken. It was true of Shakespeare, whose dramas sparkle with gems of psychological wisdom. It was true of Goethe, whose *Faust* embodies the moving evolution of the soul. It was true of our greatest American, Abraham Lincoln, whose penetrating understanding of human nature, whose skill in dealing with men, is illustrated in his reply to calumny: [1]

> New Salem, June 21, 1836
>
> DEAR COLONEL:
>
> I am told during my absence last week you passed through this place and stated publicly that you were in possession of a fact or facts which, if known to the public, would entirely destroy the prospects of N. W. Edwards and myself at the ensuing election, but that through favor to us you would forbear to divulge them.
>
> No one has needed favors more than I, and, generally, few have been unwilling to accept them, but in this case favor to me would be injustice to the public, and, therefore, I must beg your pardon for declining it. That I once had the confidence of the people of Sangamon county is sufficiently evident, and if I have since done anything, either by design or misadventure, which, if known, would subject me to a forfeiture of the confidence, he that knows of that thing and conceals it, is a traitor to his country's interest.
>
> I find myself wholly unable to form any conjecture of what fact or facts, real or supposed, you spoke. But my opinion of your veracity will not permit me for a moment to doubt that you at least believed what you said. I am flattered by the personal regard you manifest for me, but I do hope that on more mature reflection you will view the public interest as a paramount consideration, and, therefore, determine to let the worst come.
>
> I here assure you that the candid statement of facts on your part, however low it may sink me, shall never break the ties of personal friendship between us.
>
> I wish an answer to this, and you are at liberty to publish both if you choose.
>
> Very respectfully,
> A. LINCOLN

Note the elegant phrasing and the deft handling of his opponent. And Lincoln was then only twenty-seven years old.

If it is so important to know yourself, to know human nature, what should you know about it?

The art of psychologizing. Perhaps the most valuable thing to learn through the study of human nature is the art of psychologizing. Professor G. T. W. Patrick, teacher of philosophy at the University of Iowa, revered by his students, had hanging on the wall of his lecture room the motto in Greek, which freely translated meant: "Not philosophy but to philosophize." Then along came Professor C. E. Seashore, scientifically-minded psychologist, who conducted his classes in psychology in the same room. He called attention of his students to the same motto and paraphrased it, "Not psychology but to psychologize." The student of human nature, in order to derive most benefit from his studies, should learn to psychologize; that is, to analyze the psychological factors in the behavior situations with which he is constantly confronted. He should learn to psychologize himself as well as others, particularly for the purpose of influencing others in the desired directions. If you will set out to do so and attempt to apply the results of your analysis from day to day in the situations as they arise, you will be surprised at the satisfaction and benefit you will derive from doing so in regulating your own affairs and in dealing with others.

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[1] *New York Herald Tribune*, Nov. 10, 1935.

I wished to suggest to the business head of a client company that he should have meetings of his more important executives at periodic intervals for the purpose of discussing problems common to the whole organization. While conferences were held between the top executives and division executives, individually, much benefit could be derived from group discussion of the ten or a dozen department heads. I did not want to make this suggestion to the head of the company directly, in a manner he might have resented as officious conduct on my part. I therefore studied the situation as to how I might present the matter to him. I concluded that I would start a conversation with him about related matters, one of which was the fact that a new executive had just been brought into the organization. I asked the chief executive when this new department head was coming into the organization. This opened the conversation and led to the opportunity to raise the point, not as direct advice in a matter of executive policy but as a question, whether it might not be desirable to have a meeting of all the department heads as soon as the new appointee had arrived. This appealed to him and the result was that, step by step, he arrived at the conclusion at which I was aiming, and which I accomplished in a more effective manner by having him think the situation through than by making a blunt suggestion. That is what I mean by psychologizing the situation, the motives, reactions, and thought processes of the other fellow as you are trying to influence him. Maggie, in the cartoon strip "Bringing Up Father," always wants Jiggs to go with her somewhere to social functions. Jiggs is always obstinate and it leads to differences. However, one evening Jiggs comes home and asks Maggie if she would not like to go to a movie. This so surprises her that she reluctantly agrees to accept his suggestion, but on second thought decides she would rather stay home and do something else. This is exactly what Jiggs wants and he smiles to himself and says: "That $2 I paid for the book on the psychology of women certainly was well spent."

Self-interest. The second most important thing to learn in psychology is that self-interest is the strongest force in human nature. If you understand yourself, you will know that that is true of you, and if it is true of you, it is also true of others.

It is the most important thing in business. There we call it the profit motive. If a salesman knows nothing else, this is the one thing he should know. It is more valuable to him even than knowing how the gadget he is trying to sell works or how it is made, important as that knowledge is. His customer wants to know what it will do for him. One of the most successful salesmen, Mr. Vash Young, who has sold over a million dollars of insurance a year for several years, has emphasized this thought as a guiding principle in successful selling by calling it go-giving instead of go-getting. If the customer is convinced that to have the gadget will be to his self-interest, he will buy it if he possibly can. That is not only the most useful thing to know in the art of selling, it is the most useful thing to know in the art of persuasion. And it is one of the most valuable things to know in the art of living.

If you really want to know how to get along with your wife, realize that, lovable as she may be, she, too, is moved first and foremost by self-interest—self-interest in being lovable and charming, pride in an attractive home, pride in her children, pride in her cooking, even pride in the brute, her husband. If you want to get along with your wife, my advice as a psychologist to you is: appeal to her self-interest.

I do not need to turn the tables to tell wives how to get along with their husbands. If you grasp what I have said about wives, it is even more obvious about husbands. What is man but a bundle of self-interest? He is the hero—proud as a peacock of what he can do, proud of catching the heroine of the town, proud of everything he accomplishes.

To you wives and prospective wives, my advice is: If you want to get along with your husband, appeal to his self-interest.

I might continue indefinitely to enumerate the many things for the benefit of daily living that you should know about yourself and human nature. That would mean summarizing the entire book. But one more principle is so important for effective living that I want to mention it. It is this: *Don't drive, lead.* Unless you are a dictator or a military officer, don't command; lead, except once in a hundred times. That will save you endless friction and many blows, figuratively and sometimes literally. Even if you win your point and force your will by main strength upon the other person, you may lose in the long run. Coercion by brute force leaves wounds that never heal. "A man convinced against his will is of the same opinion still."

It is against human nature to be forced. Study the art of appeal and persuasion. Instead of commanding, get the other person to see the problem and lead him, step by step, to help you solve or, rather, to help him solve it. Then, if your original solution which you wanted to impose upon him by force is correct, he will nine times out of ten or ninety-nine times out of a hundred agree with you and feel that he does so of his own accord. However, once in ten times with children and once in a hundred times with adults it may be necessary to apply force or near-force. All of this becomes very clear when you apply Socrates' advice to know yourself. If you understand yourself, you realize how little you, yourself, like to be coerced, and if it is true of you, it is true of others. And the more commanding you are, the less you like to be forced.

In summary let me give you my formula for psychologizing a human situation in which two parties are concerned.

1. Analyze what the other party wants, what his motives may be. To help you do this, analyze what you yourself would want and what your motives would be if you were in his place.
2. Decide what you yourself want the ultimate outcome to be.
3. Make sure this outcome is fair for the other party as well as for yourself. As someone said, there are three sides to every question: your side, my side, and the right side.
4. Study carefully how to appeal to the other person's self-interests and inner moving forces and at the same time serve your own interests.

5. Anticipate what his reactions are likely to be.
6. Always keep in mind the ultimate outcome that you wish to attain.

Apply this formula persistently and you will win more arguments than by the canine method of a tooth for a tooth. You will win acceptance for your ideas. Differences will end in satisfaction to all concerned. Your power to influence others will increase and your personality will be enlarged.

AUTO-DYNAMICS

The third and fourth maxims in our list have to do with action—"Anything that is worth doing at all is worth doing well," with a score of 744, and "If at first you don't succeed, try, try again," with a score of 719. However, the basic conception of these two related statements is, in my opinion, better expressed in Marcus Aurelius' adage, "Life is what you make it." I shall call this the principle of auto-dynamics. It is twelfth in our list, with a preference score of 548. You move through life on your own power. The distance depends on you. If you have to be pushed, you will never get far. Auto-dynamics—self-starting, self-moving, initiative. So often you say, "I never had a chance." The probability is you did not take the chance you had—not only the one chance, but the many chances that came your way. You made no effort to see or to seize them. And what is more, long before the opportunity came, you had made no effort to be prepared to take opportunities when they do come.

The ever-present value of the principle of self-action is indicated by the many statements which express some aspect of this basic conception. In our list of 96 there are 36, or more than one-third of the total number, which refer to action, and many of these have high preference scores. Some of the chief ones are as follows:

	Preference Score
Actions speak louder than words.—*An ancient proverb.*	579
It is important to act, it is more important to think, but the most important thing of all is to think and act.—*Daniel Starch.*	533
True worth is in being, not seeming.—*Source unknown.*	456
A man's real limitations are not the things he wants to do but cannot; they are the things he ought to do but does not.—*Source unknown.*	343

	Preference Score
God helps those who help themselves.—*An ancient proverb.*	325
There is no open door to the temple of success—every man who enters must forge his own key.—*Source unknown.*	320
Nothing venture, nothing gain.—*Thomas Tusser.*	309
Where there's a will, there's a way.—*George Bernard Shaw.*	309
Success is ten per cent opportunity and ninety per cent intelligent hustle.—*Elbert Hubbard.*	292
A man's reach should exceed his grasp, or what's a heaven for?—*Robert Browning.*	258
The fault, dear Brutus, is not in our stars, but in ourselves, that we are underlings.—*Shakespeare.*	162

The aspect of the principle of auto-dynamics considered most important by our 600 men and women is *thoroughness*—"Anything that is worth doing at all is worth doing well." It is third in our list with a score of 744. If we look at this statement literally we may possibly say it is not universally true. Not everything worth doing is worth doing well. Some things are worth doing, but they are worth doing only hurriedly and superficially. It is not worth my time nor your time to read the newspaper completely or to read some books thoroughly. It is worth while for me only to read certain parts thoroughly, to notice the high spots, and pass on. However, I suspect that the notion of thoroughness conveyed by this quotation is why so many of the 600 men and women rated it so high.

The aspect considered next and almost as important is *perseverance*—"If at first you don't succeed, try, try again." This old copybook adage from William E. Hickson was fourth in our list, with a score of 719. We may also question the literalness of this statement. There are, no doubt, some things you should not try again if you don't succeed the first time. The first effort should convince you that some things are not worth doing and cannot be achieved, no matter how many times you try. The first attempt at a given business venture may demonstrate to a reasonable person that it is not likely to succeed. Occasionally, someone becomes obsessed with a notion, and nothing can divert him from continuing to try to carry it out, short of complete ruin. The inventor of a machine or device may be so persistent in attempting to perfect it or to market it that he will not listen to reason from any quarter, that the device will never be successful. However, this maxim, I believe, was rated so high because our 600 men and women were thinking about the basic aspect of perseverance expressed by it.

One further thought. People are too easily diverted from their purposes, not only from their main purposes, but from their day-to-day objectives. You fully intend to get at your task for the evening, to write some letters to friends, but you start reading about bridge and fall asleep. Shortly it is bedtime, and then you are disgusted because you did not do what you meant to do.

The third aspect of the principle of self-action is *opportuneness* of action—acting now or at the right time. Typical statements in this group are:

	Preference Score
Don't postpone unpleasant things—get rid of them.—*Elizabeth Lee.*	318
Never put off until tomorrow what you can do today.—*Lord Chesterfield.*	296
Strike while the iron is hot.—*An ancient Greek maxim.*	111
Make hay while the sun shines.—*Cervantes.*	109

It is obvious that the application of all of these statements is a matter of judgment as to whether now is the time to strike or whether you should not put off some unpleasant things. Time may solve them or make it unnecessary to perform them. No doubt, however, the central thought in the minds of the persons who rated these high is the importance of acting when the opportunity presents itself.

Since the principle of auto-dynamics emphasizes the fact that achievement depends on self-action, it affords particular occasion for self-examination. Each one of the maxims may be converted into a question for self-examination.

A group of young men were in the habit of meeting in the evening to bowl. One of them was always laying the blame for a poor ball on some external cause. It was either his shoes, or the floor, or the light, or something else that was at fault. It was never himself.

Usually, however, the cause is within ourselves. Self-searching is good for the soul. We should look within rather than without for the causes that will make us succeed. Let us ask ourselves:

1. Am I really regulating my own affairs—my own little day-to-day acts as well as my larger affairs and problems?

2. Am I always blaming circumstances and other people for what happens?
3. Am I always looking at my neighbor's pasture and thinking how much greener it is?
4. Am I realizing that what I do must come from within me—that *my* kingdom of heaven is within *me?*

Similarly, practically every one of the statements relating to the principle of auto-dynamics may be converted into a self-searching question.

It may be boring to exhort and to repeat that you must be a self-starter, but I want to tell you this: Twenty-five years ago, two young instructors had near-by offices in a large university. They had equivalent training in their respective sciences. Each was going to write a textbook in his chosen field. They talked about it often. But one was a self-starter. He wrote his book and several more which were highly successful. Now, after twenty-five years, the other one is still "going to" write his. "The flesh is weak," as Paul said. The spirit must not only be willing, it must be strong. Time moves on, it will not wait for you, and before you realize it, twenty-five years have slipped by.

To make a start, do not be self-critical and wonder whether to do it this way or that. Simply *start.* After you have gone a ways, examine critically what you have done. Once you have started, each step will generate interest for you in the next. There is no escape—"Life is what you make it."

Hedo-Dynamics

The next maxim in our list with a score of 697 is, "The great essentials of happiness are something to do, something to love, and something to hope for" (Chalmers). Everyone wants to be happy. Everyone wants the feeling of physical well-being and the sense of mental happiness and security. These are biologically and psychologically basic in human nature. Let us call this conception the principle of hedo-dynamics, the power of pleasure, from the Greek word "hedone," pleasure. There is dynamic value in happiness, in optimism. Your physical and mental machinery works better when there is a sense of happiness and well-being. A little oil does wonders to the operation of a machine. It runs with less effort and lasts longer. Happiness is the oil of human behavior. It facilitates your physical functions—the digestive processes and, indirectly, many other bodily processes. It illuminates your personality, creates optimism in others, and facilitates your influencing of the behavior of others.

There is no such thing as mere happiness or empty happiness. That is the kernel in the quotation from Chalmers. It points out the fact that you secure happiness *through* something to do, something to love, and something to hope for. You do not secure happiness merely by chasing after happiness as such. The empty pleasure-seeker usually gets into mischief. How, then, may you secure happiness?

First and foremost, through your occupation. Aristotle expressed this principle of behavior by saying: "Happiness is a working of the soul in the way of excellence." That is, it consists in doing work well. You can be happy throughout a lifetime if you have a permanent purpose and objective. That is why it is so essential to choose a lifework which, most of all, you will enjoy pursuing. A person without stable objectives is constantly flitting from one thing to another, thinking that this or that will give him greater satisfaction. Rather than constantly shifting from one thing to another, he should examine himself to search for something in which he can take a long-range, permanent interest. One of the necessary requisites for enjoyment in one's occupation is to learn something about it, to keep inquiring about it, and to keep improving in it. Interest develops with knowledge. Almost any work that serves society is interesting, if you look for interest in it and learn about it. The pyramids of Egypt may be dry as dust, but if I learn something about them they may be very fascinating. The theory of relativity, to me, may be very abstract and uninteresting, but to Einstein it is all-absorbing because he knows a great deal about it.

Second, you secure happiness through "something to love," through family, friends, and objects, ideals, or pursuits to which emotional satisfaction attaches. Make yourself happy by making others happy.

Third, you secure happiness through hope, aspirations, and expectations of the future. Much of the inspiration in life comes from looking forward, from planning and from expectations of attainment. "Hope springs eternal in the human breast" (Pope).

Learn to enjoy your own thinking. Your thoughts are your rarest possessions. No one can take them from you. Cultivate their companionship. Enjoy them as your best friends. Your mind is the theater in which your imagination creates the new, the beautiful, and the precious. There you play the drama of life. There you see it through your mind's eye. There you must enjoy it. You enjoy a drama on the stage or screen only as you reproduce it with its mental images and emotions on the stage of your mind. "The pleasantest things in the world," says Montaigne, "are pleasant thoughts; and the great art of life is to have as many of them as possible."

It would seem unnecessary to mention here to intelligent persons the elementary requirements for physical well-being. A farmer takes better care of the physical well-being of his domestic animals than we do of our ordinary physical well-being. If you want to be sure to have a blue Monday, overeat on Sunday. The average person, particularly in sedentary urban occupations, overeats, especially in rich foods; and under-sleeps. The elementary requirements of rest and food are more responsible for mental cloudiness, a depressed attitude, and inefficiency than any of us realize from day to day. Everyone should self-examine his routine of living in these respects or do so with the help of someone else who can take a professional, unbiased point of view. Those who overeat think they eat very little; and those who under-sleep think they rest sufficiently. You hear it said, "So and so eats like a horse." As a matter of fact a horse eats much more sensibly. Without going into detail, my advice is, look to your eating and sleeping.

The arch-enemy of happiness is fear—worry. That is true of young and old alike. Not long ago I was going to my office on an early morning commuting train. Several young women were standing in the aisle talking their usual morning gossip. After some conversation one of them said: "I wish I could spend just one day without worry."

What are we all worrying about? I know I spend more time and nervous energy worrying than I have any reason or occasion to, and yet I do it all the time. We all carry around an invisible magnified load on our backs. On many a day we spend more energy in worry than in work. I dare say that most of you worry chiefly about two things:

1. Fear of failure
2. Fear of criticism.

Fear of something happening to you or yours that will make you fail in accomplishing what you want to accomplish, and fear of losing the regard and approbation of your fellow men. Three-fourths of the people, it is claimed, confess that fear of failure is their strongest fear.

What can you do to banish fear? I am not sure that I can tell you. I doubt if it does much good merely to tell yourself or someone else not to worry. Just as mischief finds work for idle hands to do, so you can crowd out worry by work or play. My first suggestion is the principle of substitution. It is difficult if not impossible to drive out fear by telling it to get out. You can force it out by occupying yourself with something else.

My second suggestion is to find out for yourself how many fears are fictitious. Take a notebook and pencil and make a list each day of the things that worry you. Do this for a week and then put the notebook aside for a month or so, long enough to give all the things you feared a chance to happen. Then get out your notebook and write opposite each one what did happen. You will be surprised, not at what happened, but at what did not happen. I have made this experiment off and on for years and I think it is correct to say that nine out of ten worries never materialize and the tenth fear turns out nine times out of ten to be far less frightful than originally pictured. Someone has said that man is an emotional animal that sometimes stops to think. When fear is upon you, stop to think and realize that in your own past experience most of your fears turned out to be fictitious.

IDEO-DYNAMICS

The next two quotations on our list which are not covered by any of the preceding principles are the one from Proverbs, "As a man thinketh in his heart so is he," and the well-known statement from Thomas Hobbes, "Knowledge is power." Each has a preference score of 615, which places them seventh and eighth in our entire list. Their central thought is the power of ideas, the power of thinking, the power of knowing, and particularly knowing *how*. Let us call it the principle of ideo-dynamics. It emphasizes the power of thinking in forming personality and in guiding actions. Personality consists largely, if not entirely, in thinking on the one hand, and the expression of thinking in behavior on the other. The importance of this principle in life is indicated by the fact that there are at least a dozen other statements with high preference scores which express various aspects of ideo-dynamics. Foremost among these is the ability and the effort to think ahead. At the head of the list is the old maxim, "An ounce of prevention is worth a pound of cure," with a score of 564, which placed it tenth in the list. The one with the next highest score, 533, is the one already quoted under the principle of auto-dynamics, as it emphasizes both thinking and action, namely, "It is important to act, it is more important to think, but the most important thing of all is to think and act" (Starch). The other statements emphasizing various aspects of thinking are:

	PREFERENCE SCORE
True worth is in being, not seeming.—*Source unknown.*	456
The only way in which one human being can properly attempt to influence another is by encouraging him to think for himself.—*Leslie Stephen.*	414
A good way to relieve the monotony of any job is to think up ways of improving it.—*Source unknown.*	405
Self-trust is the first secret of success.—*Emerson.*	373
Man does not live by bread alone.—*The Bible.*	361
Where there is no vision, the people perish.—*The Bible.*	356
The Kingdom of Heaven is within you.—*The Bible.*	263
He can who thinks he can.—*Vergil.*	187

Two other statements emphasizing foresight are:

A stitch in time saves nine.—*Thomas Fuller.*	222
Look before you leap.—*John Heywood.*	213

Some of these statements, when considered literally, require, of course, qualification. "Look before you leap" may be in apparent conflict with another statement which says, "He who hesitates is lost." It of course stands high because of its emphasis upon caution and careful advance consideration.

A friend of mine has two bookkeepers. One got her job and learned all she could about bookkeeping in night school and by herself at home. She now is head of the department and earns a comfortable salary. The other started a little earlier and was intended to be the head of the department. She has never in five years done anything to learn more about bookkeeping. She knows no more about it than she did five years ago. Result: She has less responsibility than she had five years ago and is not sure of her job.

The central thought in "Knowledge is power" is undoubtedly the value of knowing, and especially knowing how. Two further statements which have considerable preference in our list of 96 are from Abraham Lincoln and Elbert Hubbard with preference scores of 229 and 170 respectively:

> I will study and prepare myself and some day my chance will come.—*Lincoln.*
>
> Responsibilities gravitate to the persons who can shoulder them and power flows to the man who knows how.—*Hubbard.*

How can you think effectively? I will set down only two or three suggestions; for more complete discussion turn to earlier chapters. My first suggestion is, ask questions. Ask yourself questions about your job. Ask others. Go to books. Go to magazines. Think through what you hear and read, and formulate your own answers.

Next create new ideas about your job and about your relation to it, about your company's work and problems. Create new things to do in connection with the job you are doing. Use your imagination. Remember, "Where there is no vision the people perish."

Third, get yourself into a relaxed, unhurried, calm frame of mind so that your ideas can play and wander freely. Only in such an attitude will your thinking lead to new, inspired thoughts. New ideas are very delicate and appear vaguely on the edge of a large unknown world. Gruff, hurried thinking crushes them. It is therefore essential, for the best thinking, to be entirely undisturbed and alone. It is for this reason that I do my best thinking either late at night before going to sleep or early in the morning just after awaking. The mind is then completely free to follow paths of thinking and imagining not possible otherwise.

Fourth, without fail make a record of your new ideas. You may think you will recall them when you want them again, but nine times out of ten you will be unable to do so to save your soul. New ideas are rare. Note them down so that you will surely have them when you want them. I make a practice always of having notepaper in my pocket or at my bedside. Many times do I make notes early in the morning or even during the night if I awake and something occurs to me that I want to be sure to use later. Inspired thoughts are precious; do not let them slip away.

When Professor Bliss Perry as a young man returned from Germany, he ventured to complain to his father of the minor interruptions that the Williams College routine occasioned in a scholar's day. The elder Professor Perry replied, "If you are turning a grindstone, every moment is precious; but if you are doing a man's work, the inspired moments are precious."

Finally, hold in your mind's eye a picture of yourself as you would like to be, a picture of the kind of person you would like to be, a picture of the performance and attainment you would like people to associate with you. If you study biographies of great men, you will find that they had pictures of themselves in their minds. They knew their abilities, their greatness. They lived and acted accordingly in order to attain their objectives. A truly great person knows this inwardly but is modest outwardly. If you would be a great leader, hold vividly and assiduously in your mind a picture of yourself being such a leader and calculate how you may become such a leader. Think leadership and act leadership. All your behavior will then be directed toward that goal. So many people, particularly young people, believe that greatness may be achieved at a single stroke. But that is not so, or at best only rarely so. You attain greatness only by building toward greatness. That is true not only of greatness itself, it is true even of the everyday, average but worthy achievement. You can attain even that only by doing your job in a day-to-day effective manner. You do not become even an ordinarily competent individual at a single stroke. You become that kind of a person only by continuously and industriously building through your whole lifetime.

Balance and Synthesis

The next statement, which stands fourteenth in our list, is partly covered by some of the principles already discussed but partly not. It is the statement, "Be calm and self-possessed, know what you are about, be sure you are right, then go ahead and don't be afraid." It was formulated by myself out of self-defense after many years of teaching. I found that no matter how long I continued to teach large groups of students I had miniature stage fright every time I went before a group. I formulated the statement almost automatically as a defense mechanism. I endeavored to prepare myself thoroughly and to keep myself fully in hand and then to realize that I had nothing to fear. I have found this simple formula most helpful not only in my teaching, but since then in business and in all sorts of human contacts.

The phrases, "Know what you are about, be sure you are right," are covered under the principle of ideo-dynamics—the value of ideas and correct thinking. The phrase, "then go ahead," is comprised in the principle of auto-dynamics—of self-action. However, the phrases "be calm and self-possessed and don't be afraid" are not directly included under any of the preceding five concepts. Let us designate it the principle of Balance and Synthesis. Calmness—banishment of fear—self-control—are its essence. Goethe in *Faust* considered self-mastery so important that he had Mephistopheles say, "My friend: be thou but self-possessed, thou hast the art of living."

Another aspect is the need of putting together in proper balance all the basic principles for conduct. Thinking alone without action is of little avail. Action without thinking is haphazard. Mr. Micawber, Dickens' lifelike character, was long on thinking up wisdom but short on action. He was always ready to quote bits of wisdom, to give counsel and advice to others, but he was always waiting for something to turn up. He was long on ideo-dynamics, but short on auto-dynamics. The result was that he was, as he himself said, forever floored.

Self-mastery is indispensable in making the most of your powers. It is equally necessary in dealing effectively with others. If the other person is ill-tempered, you disarm him if you deal with him calmly and temperately. It impresses him with your own self-control and self-confidence. It shows him that you have courage and firmness and intend to be right and fair. The way to keep oneself in hand is emphasized by the following statement, which was thirty-eighth in our list of 96: "A display of temper is nothing more than displaying weakness. If we could but take time to stop to think, there would be no more anger, for thinking erases anger." President Charles W. Eliot of Harvard University was asked at the age of 89 for the secret of his long and successful career. His reply was, "My experience does not furnish a short explicit prescription of keeping health and working power till 89. I will say, however, one thing seems highly important—keep as calm under all circumstances as your nature permits."

Our consideration of the principle of balance and synthesis, indeed, of all the principles of conduct here set forth, would be incomplete without reference to the contribution to this subject by the greatest mind of antiquity, Aristotle, in his *Ethics*, Book II.

Aristotle develops the thought that virtue is a "mean state between excess and defect." Courage, for example, is a mid-point between cowardice and rashness, "For the man who flies from and fears all things, and never stands up against anything, comes to be a coward; and he who fears nothing, but goes at everything, comes to be rash. Self-mastery and courage are spoiled by the excess and defect but by the mean state are preserved."

A most inspiring conception of the principle of balance, the principle of the golden mean, is Aristotle's lofty statement of the Great-minded man:

> The very name of Great-mindedness implies that great things are its object matter. . . . He is thought to be Great-minded who values himself highly and at the same time justly. . . . Being by hypothesis worthy of the greatest things, he must be of the highest excellence . . . and whatever is great in each virtue would seem to belong to him. . . .
>
> Honour is specially the object-matter of the Great-minded man. . . . In respect of wealth and power and good or bad fortune of every kind, he will bear himself with moderation, fall out how they may, and neither in prosperity will he be overjoyed nor in adversity will he be unduly pained. . . . He is not a man to incur little risks, nor does he court danger, because there are but few things he has a value for; but he will incur great dangers, and when he does venture he is prodigal of his life as knowing that there are terms on which it is not worth his while to live. He is the sort of man to do kindnesses, . . . accordingly he will greatly overpay any kindness done to him. . . .
>
> It is characteristic of the Great-minded man to ask favours not at all, or very reluctantly, but to do a service very readily; and to bear himself loftily towards the great or fortunate, but toward people of middle station affably. . . . It is a property of him also to be open, both in his dislikes and his likings, because concealment is a consequent of fear. Likewise to be careful for reality rather than appearance, and talk and act openly . . . but to be reserved towards the generality of men. . . . Neither is his admiration easily excited, because nothing is great in his eyes; nor does he bear malice, since remembering anything, and specially wrongs, is no part of Great-mindedness, but rather overlooking them; nor does he talk of other men; in fact, he will not speak of himself or of any other; he neither cares to be praised himself nor to have others blamed; nor again does he praise freely, and for this reason he is not apt to speak ill even of his enemies. . . . He is by no means apt to make laments about things which cannot be helped, or requests about those which are trivial. . . . Slow motion, deep-toned voice, and deliberate style of speech are thought to be characteristic of the Great-minded man; for he who is earnest about few things is not likely to be in a hurry, nor he who esteems nothing great to be very intent: sharp tones and quickness are the result of these. . . .

This then is my idea of the Great-minded man (Artistotle's *Ethics*, Book IV, Section III).

If we apply Aristotle's thinking to our principles of human behavior, it is evident that most if not all principles of human behavior must be a balance between extremes. Literal and unrestricted observance of many maxims would lead to absurdities. Many maxims must be qualified and some, although they contain a kernel of truth, are actually contradictory when taken literally. We must therefore bear in mind Aristotle's doctrine of the mean.

Literal observance of some maxims would lead to inaction. If "Look before you leap" would keep you from jumping, and "He who hesitates is lost" would make you jump at once, the result would probably be complete inaction. One statement says "An ounce of prevention is worth a pound of cure" and another says "Don't cross your bridges until you come to them." One says look ahead, the other says don't look ahead, but the common-sense interpretation is Aristotle's mean between these extremes, which should result in wise caution—the middle ground between complete lack of foresight and undue worry.

Retain your balance by diversifying your interests and by taking a little time each day for contemplation to get your bearings. Emerson said everyone should take an hour apart each day to be alone by himself to think.

Personally I receive a most satisfying and refreshing balance from listening to music. I wholly agree with what Fritz Kreisler, the famed violinist, says: "Music is, and always will be what it has been through all the ages—a cultural necessity, a necessary medium for the refreshing of a person's soul and spirit. . . . Good music makes better men."

Diversity of interests and time for reflection is what Prime Minister Stanley Baldwin of England meant when he said that his modest aim in life was "to read the books I want, to live a decent life, and to keep pigs." To this I would add, and to have some genuine friends to whom you can open your soul.

Deo-Fidelity

There is finally one more statement which is not comprehended in any other. While it was not rated among the first twenty-five, it was, however, chosen sufficiently often to indicate that it is valued highly by many persons. It is the statement from Proverbs, "Trust in the Lord with all thine heart; and lean not unto thine own understanding. In all thy ways acknowledge Him and He shall direct thy paths." It had a score of 259 which placed it forty-first on our list. A similar quotation from the Bible, "God is our refuge and strength, a very present help in trouble," had almost as high a score, namely, 252, which gave it forty-third rank. The underlying thought in these two statements is trust in a Supreme Power. Let us call it the principle of deo-fidelity.

The great mass of human beings everywhere and in all ages have felt the need and the benefit of reliance on a power greater than themselves and outside of themselves. I shall not discuss the metaphysical question whether there is a God or what His nature may be. Let us accept the fact that the great mass of the two billion people in the world today take a God for granted and consider trust in Him of practical value. Let us ask wherein this value lies. If I analyze the efficacy of this faith correctly, I believe it lies in at least two directions.

First, trust in a divine power creates a stabilizing faith, a sustaining philosophy that the good and the right will prevail. It is a compass by which to keep life to its true course. Therefore, when the ups and downs of life come, it serves as the power to which to hold fast. And to those who live by it, it is a real and a potent power in behavior. It is the faith that sustains the spirit.

Arthur Brisbane, experienced observer of motives and men, points out that peoples cannot or do not like to get on without some form of religious faith. In his daily column (October 30, 1935) he said:

> Hitler discovers now, Napoleon did more than 100 years ago, that stable government requires the coöperation of well-established religion. Perhaps Russia will make that discovery later.
>
> The French revolution got rid of the clergy, planned to get along with one "Supreme Being." Napoleon took charge and decided that he needed a "spiritual gendarmerie" as well as a military force, and restored the church.
>
> Dr. Schacht, head of the German Reichsbank, is aware that religion inspires respect for money and its rights, and inspires Hitler's announcement that "Government will lead along the path of positive Christianity and not along the false path of anti-Christian doctrines."

In the same vein, Herman Finer, in his book, *Mussolini's Italy*, as reviewed by William MacDonald, says: "All statesmen, even the Bolsheviks, are obliged to invent a god as soon as they have destroyed one."

Second, deo-fidelity, trust in God, the Supreme Being, diminishes fear and increases courage. To the believer, God is his refuge, his present help in trouble. I need not discourse upon the part of courage in lesser as well as greater situations in life. Some day take a few minutes to read the address on courage delivered by James M. Barrie before the students of St. Andrew's University, in which he said:

> Courage is the thing. All goes if courage goes. . . . We should thank our Creator three times daily for courage instead of for our bread, which, if we work, is surely the one thing we have a right to claim of Him.

The principle of deo-fidelity is evidently a potent power in human behavior.

The Balanced Wheel

Thus we have seven principles upon which the art of living must be based. How can we apply them in day-to-day living? To what extent are we applying them? There are two ways to find out. One way is to ask yourself in detail about each of these seven principles, whether and how you are applying them. Ask yourself:

1. Would you want others to do to you what you are doing to them? Consider today's behavior and ask yourself this question about your conversations or transactions with others.

2. Do you really try to understand yourself? Are you really trying to understand the behavior, acts, and motives of others? Are you trying to apply that analysis to your own behavior and to your dealings with others?

3. If "life is what you make it," are you really doing your work and living day by day with that realization in mind? Are you realizing that you must assume responsibility for what you accomplish, that you cannot lay the blame for what you may or may not achieve upon other people or outside circumstances? Are you thorough where thoroughness is required? Do you persevere? If "knowledge is power," are you assiduously trying to understand more about what you are doing or would like to do? Are you earnestly trying to do better what you are doing or would like to do?

4. Are you seeking happiness through "something to do, something to love, something to hope for"?

5. Are you really thinking about what you are doing? Are you using your imagination, are you applying vision, creative thinking?

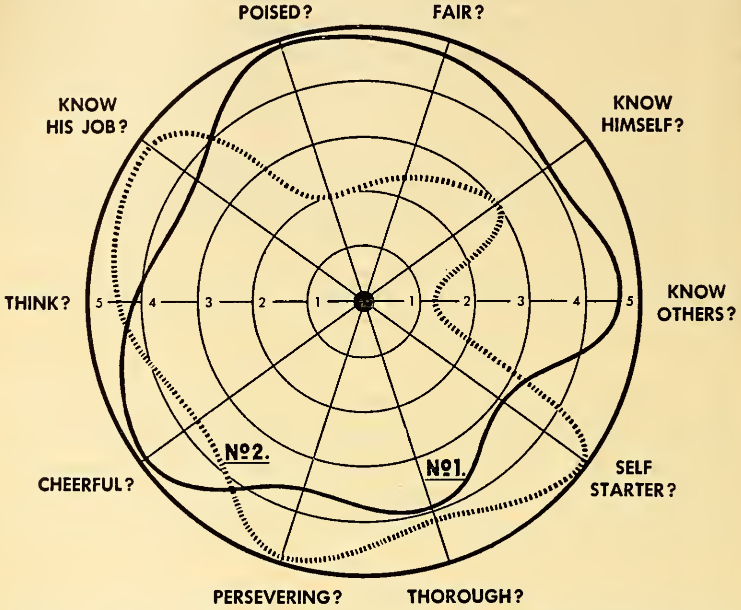

FIG. 58. The personality wheel. Ratings of two business executives by three persons well acquainted with both. No. 1 is more evenly balanced than No. 2. Both are strong executives.

Are you thinking of ways to do your job better? Apply these questions to today's work.

6. Are you poised, self-controlled? Are you balanced and temperate?

7. If reliance upon an outside super-power is helpful to you, are you developing this attitude in a manner that steadies you in your work and holds you to the enduring faith that the right will prevail?

The second way to ascertain to what extent you are applying these principles is to have these questions answered about yourself by three or more persons who know you and can answer them frankly. This should be done anonymously through a third party.

In order to evaluate yourself more definitely in terms of the basic principles of behavior set forth in this chapter, the ten central ideas in these principles are combined in a rating scale designated "The Measure of a Man." Question No. 1 is based on the principle of reciprocal behavior; Nos. 2 and 3 on psycho-dynamics; Nos. 4, 5, and 6 on auto-dynamics; No. 7 on hedo-dynamics; Nos. 8 and 9 on ideo-dynamics; and No. 10 on balance and synthesis. The principle of deo-fidelity is omitted here because it is so personal and subjective a matter that it would be difficult for anyone but the person himself to evaluate it.

THE MEASURE OF A MAN

Rating Scale Based on the Fundamental Principles of Behavior

Name of person rated____________________Date____________

Rate yourself first and then arrange through a third party to have three or more persons well acquainted with you rate you. Then obtain a numerical average for each question and plot the results on a circular grid like Fig. 58.

"Average" in the following means that a given principle is applied, or a given characteristic is possessed, to the extent to which it is applied or possessed by the average person in the general class of occupation in which the person in question is engaged.

	1 *Poor*	2 *Fair*	3 *Average*	4 *Good*	5 *Excellent*
1. Is he FAIR?					
2. Does he KNOW HIMSELF?					
3. Does he UNDERSTAND OTHERS?					
4. Is he a SELF-STARTER?					
5. Is he THOROUGH?					
6. Is he PERSEVERING?					
7. Is he CHEERFUL?					
8. Does he THINK?					
9. Does he KNOW HIS JOB?					
10. Is he BALANCED?					

ARE YOU A WELL-ROUNDED PERSON?

Are you a well-rounded individual, who rolls along through life smoothly and easily because you have systematically developed all of those qualities that contribute to a well-rounded personality? Or are you a lopsided fellow who goes bumping along as best you can, just hitting the high spots on one or two well-developed qualities? Make a graph of your own ratings so that you can see just how well-rounded or how lopsided you are, as the case may be. An executive who rated himself and then had himself rated through a third party by several associates and subordinates said nothing had happened to him in ten years that had been so revealing, and had taken so much conceit out of him.

Is your wheel on the chart large or small? If it is large with all the qualities well developed, you will cover more distance—a large wheel goes further with the same number of turns.

This is not something devised merely to serve as an interesting pastime. It is to serve a serious practical purpose. Study this balance wheel of assets with a critical eye. Then set about improving it. You will find yourself long on some qualities and short on others. Go to work conscientiously on the shortcomings. From time to time re-check yourself to see what progress you are making. Put this chart where you will see it once each day.

If your chart shows that you are inclined to be unfair—to treat others the way you would not want to be treated—try each day to be more fair. If your chart shows that you are inclined not to be a self-starter—to put things off—make it a point to get things done more promptly each day. Do this until you get caught up, then resolve to stay caught up. If you find it hard to coöperate with others, particularly those you dislike, study yourself and the psychology of the other person, train yourself to consider the merit of each proposition dissociated from personalities. And train yourself to give your support to any good proposition, regardless of your likes and dislikes for the man promoting it. Whatever your shortcomings may be, they are making it more difficult for you to get ahead. They are preventing you from being your own ideal of what a well-rounded person should be. Don't go along through life with your flywheel all out of balance.

If I were to condense still further the seven principles which in turn summarize the 96 maxims, rules, or statements concerning human behavior, I should mention just four:

1. Think.
2. Act.
3. Be balanced. Follow Aristotle's Golden Mean.
4. Be fair. Follow Jesus' Golden Rule.

"Faith without works is dead." This is the philosophy of the colored mammy cook:

> Case cookin's lak religion is—
> Some's 'lected and some ain't,
> An' rules don' no mo' mek a cook
> Den sermons make a saint.

"If wishes were horses beggars might ride." Empty wishes are of no value. It is a waste of time to read about psychology, human nature, or the art of living unless it makes a difference in you. The only one who can make a difference in you is you yourself. Education is not a bundle of knowledge you can tie to your back and walk off with it any more than you can tie a lunch basket to your back and expect it to satisfy your hunger. Education is a process of assimilating knowledge and skill into the very essence of your being. There is only one kind of education and that is self-education.

We have attempted in this book to discuss things that make a difference. I hope in turn this study will make a difference *to* you and particularly *in* you. But whether it does depends on you. The Golden Rule may be the sublimest law of life, but whether it makes a difference in your life depends on you.

What you know is important, but what you do about what you know is equally important. Demosthenes was the great orator of the Greeks and perhaps the greatest orator of all time. They had politics and rivalry in those days as we have today. Demosthenes was bracing up the Athenians in their difficulties with their neighbors, the Macedonians. From his youth he trained himself in the art of speaking. He built an underground study in which he spent two to three months at a time practicing oratory. He shaved one side of his head to keep himself from mingling with people in order to stick to his training. Aeschines was one of his rival orators. According to tradition, the difference between the two was that when Aeschines spoke the people said, "How great is Aeschines." But when Demosthenes spoke the people said, "Let us go against the Macedonians." It is important to act, it is more important to think, but the most important thing of all is to think and act.

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